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## ABSTRACT

Twenty-one papers address issues related to competitive employment of persons with mental retardation. The papers are grouped into four distinct sections having the following headings: general papers, transition from school to work, parent involvement, and bahavioral training strategies. The individual papers are as follows: "Critical Values in Employment Programs for Persons with Developmental Disabilities" (P. Wehman and M. Moon); "A Supported Work Approach to Competitive Employment of Individuals with Moderate and Severe Handicaps" (P. Wehman and J. Kregel); "Supported Work Model of Competitive Employment for Mentally Retarded Persons: Implications for Rehabilitative Services" (W. Revell et al); "Demographic Analyses Related to Successful Job Retention for Competitively Employed Persons Who Are Mentally Retarded" (J. Hill et al); "Differential Reasons for Job Separation of Previously Employed Hentally Retarded Persons across Measured Intelligence Levels" (J. Hill et al); "An Analysis of Monetary and Nonmonetary Outcomes Associated with Competitive Employment of Mentally Retarded Persons" (M. Hill et al); "Time Limited employment and recent job history. Results showed that the industry-based rehabilitation model achieves its goal of competitive employment for handicapped participants (72% were currently employed at short-term followup and 70% were employed at long-term followup). Despite a significant relationship between type of handicap and current employment status, the majority of clients in all four handicapped groups were competitively employed 1-10 years following placement. The 10 client variables examined in the study did not significantly predict successful employment outcomes at long or short-term followup or for any of the handicapped groups with one exception: employer ratings of clients after 1 month on the job were significantly related to successful employment outcomes for the learning disabled group. (Author/CL)

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# COMPETITIVE EMPLOYMENT FOR PERSONS WITH MENTAL RETARDATION: FROM RESEARCH TO PRACTICE

Volume I
1985

Edited by:
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The work involved in completing a research monograph of this magnitude is enormous especially since actual operations in our Center did not commence until October, 1983. The number of research papers and other articles in this monograph are original pieces of work which have been developed since the National Institute of Handicapped Research funded us as a Rehabilitation Research and Training Center on Mental Retardation. Our designated priority has been on improving the employability of individuals with mental retardation.

There are many people who have contributed to the development of the research and demonstration described in this monograph. Most of the professional staff at the Center has been involved in someway or another through performance of the activities described. Virtually all of the staff have co-authored one or more of the enclosed papers. This reflects the fact that our professional staff functions as a team working closely together on a series of research and training projects. It is this team approach which has enhanced the substantial productivity we have enjoyed.

We are grateful to several people at the Federal level of the U. S. Dept. of Education who have facilitated our work, not only with funding support but equally important with their accessibility and direction. From the National Institute of Handicapped Research, Dr. Richard Melia our project officer has been a pillar of support. He has given us help when needed, both technically as well as logistically. We hope he continues to be our project officer. There are other federal officials such as Dr. William Halloran, Michael Ward, Paul Thompson, and Nancy Safer who have sharpened our thinking about the best directions for research and training in the employment of handicapped individuals. We are also grateful to Carol Inman, Parent Involvement Specialist at the U. S. Dept. of Education for her thoughts and directions in

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The national leadership of Mrs. Madeleine Will, Assistant Secretary of the Office of Special Education and Rehabilitative Services has been an inspiration to our staff. The time has been long overdue for well articulated direction from this office. Mrs. Will provides a clear message and the work of our Center represents the policies and philosophies which have come from this office.

At the Regional level, Region III Rehabilitative Services Commissioner, Dr. Ralph Pacinelli, has been highly supportive of the Center activities. He and his staff have been most accomodative of ways to translate our research and training into public policy. Dorothy Columbus and Dr. Harold Kay are two special people in this office who have been tremendous advocates of our work. We are very grateful to them.

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Paul Wehman
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January 1, 1985

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# Section I: General Papers and Studies Related to Competitive Employment of Individuals With Mental Retardation

The purpose of this section is to present two types of papers. First, there are several position papers describing values which we think are important in employment programs and how supported work can play an important role in enhancing competitive employment for those with mental retardation. The second type of paper in this section is empirical. We have collected longitudinal data on the performance of mentally retarded workers since 1978. Therefore, there are several studies available on demographic characteristics of this population, the benefit and cost aspects of this program and the reasons why clients fail. This section of the monograph sets the tone for the balance of the volume.

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# COMPETITIVE EMPLOYMENT FOR PERSONS WITH MENTAL RETARDATION

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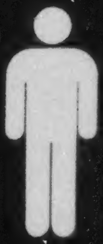

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# CRITICAL VALUES IN EMPLOYMENT PROGRAMS FOR PERSONS WITH DEVELOPMENTAL DISABILITIES

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## Abstract

The purpose of this paper is to delineate a number of important values which are essential in effective employment programs for persons with developmental disabilities. There are many efforts occurring nationally to create new vocational programs for disabled persons and hence it is necessary to articulate key aspects of meaningful employment programs. In this paper we identified the following nine values: a) employment in integrated settings; b) decent pay; c) the need for vocational choices; d) avoiding "charity" work; e) vocational training to reflect local labor needs; f) parent involvement in planning; g) parent education relative to social security laws; h) community-based vocational training; and i) systematically planned transition. These values are described and examples are given of each.

# Critical Values In Employment Progam for Persons With Developmental Disabilities

With the increased federal emphasis on employment for persons with developmental disabilities (Elder, 1984; Will, 1984), there are, as might be expected, many new vocational programs being designed or redeveloped. This is a greatly needed priority since it is clear from several studies that the employment opportunities for developmentally disabled individuals have not been very good. Wolfe (1980) indicates that there is is major wage per hour discrepancy between disabled and nondisabled persons. She reports that disabled persons earn $2.55 per hour while their nondisabled counterparts earn better than $4.50 per hour.

Even worse than such poor wages are the unemployment rates which are in evidence nationally for those with disabilities. The United States Commission on Civil Rights (1983) reports that 50-75% of all disabled individuals are unemployed. This rate is similar to an earlier reported Department of Labor report in 1979 which reflected a 59% unemployment rate. There are other studies in different states which seem to reinforce these unacceptably high levels of unemployment. In Maryland, for example, (Crites, Smull, & Sachs, 1984), a survey of 1450 developmentally disabled persons found that only five percent of all persons were reported to have a regular job. Similarly a Virginia study of 263 parents of mentally retarded persons (Hill, Seyfarth, Orelove, Wehman, & Banks, 1985) revealed that only 13 (or also five percent) of these parents reported that their son or daughter had a regular job.

In Vermont (Hasazi, Preskill, Gordon, & Collins, 1982) and in Colorado (Mithaug & Horiuchi, 1983) studies have been conducted which assess the employment status of young developmentally disabled adults who have recently finished special education. Hasazi and her colleagues found an unemployment rate of 46% and Mithaug and Horiuchi cited an unemployment level of 31%. In both states very poor wages had been earned by the young adults. In Virginia we (Wehman, Kregel, & Seyfarth, in press) have completed a follow-up study of 300 mentally retarded persons. Our preliminary data indicate that 58% of these individuals were unemployed with over 78% of the moderately and severely retarded population unemployed.

These statistics do not reflect favorably upon the vocational training and employment efforts which have been conducted previously. However, it is clear that the new federal initiatives and recently enacted Developmental Disabilities legislation are placing far greater emphasis on expanding employment opportunities and improving employment programs. To this end, we see the need to clarify what values should be dominant in successful employment programs for persons with developmental disabilities. Therefore, it is the purpose of this paper to identify numerous values which we feel are essential in the design of employment programs. Areas that we will address include nature of the work environment, amount of remuneration, type of training model, and parent role.

## Employment Opportunities in Integrated Settings

A principle value which we hold is that employment opportunities need to be available in vocational settings where nonhandicapped persons work. Integrated settings are vocational environments in the community where jobs are performed principally by nonhandicapped workers. This is work which must be completed; it is not simulated or make-work. Sheltered workshop programs, adult activity centers, and other large segregated vocational centers should not be the first choice of placement for persons with disabilities.

There are several reasons why employment in nonsheltered, integrated settings is an important aspect of job placement. First, working with nonhandicapped persons is normal and it represents participation in the mainstream of the nation's labor force. Second, nonsheltered employment provides an opportunity for those workers without handicaps to interact and become friends, often for the first time, with disabled persons. Third, work is frequently an activity which shows individuals with disabilities in a very competent role. This is highly advantageous for acceptance of the developmentally disabled person. A fourth reason for work-integrated settings is that there is literature (e.g., Shafer, in press) which suggests that developmentally disabled persons will perform better in settings where there are competent peer models to observe. Finally, although we do not have data to support this notion, anecdotal evidence over the years of our placement experiences strongly indicate that the self-perceptions of disabled persons who work in normalized, integrated settings are higher than those who are confined to sheltered or segregated environment.

## Decent Pay Should Be Available For Meaningful Work

It is not sufficient for persons with developmental disabilities to work in nonsheltered and integrated environments. Decent wages need to be provided as a consequence of the meaningful work which is being performed. The notion of volunteer work which is espoused by some (Brown, Shiraga, York, Kessler, Strohm, Sweet, Zarella, VanDeventer, & Loomis, 1984) suggests that many developmentally disabled persons are excluded from work because employers are reluctant to pay them for less than adequate work performance. The Brown et al. (1984) thesis is that the opportunity to work for free in an integrated setting is more desirable than work in a sheltered enclave in industry or a sheltered workshop where money can be earned. Part of this thesis is based on the undeniable facts that most workshop wages are very poor for severely disabled persons and also that clients in segregated programs do not usually exit these programs for long-term competitive employment (Whitehead, 1979). Bellamy and his associates (1984) have eloquently responded to the volunteer work philosophy by identifying a number of variables which the Brown et al. paper seems to have overlooked or minimized with the principle factor being that integration is only one dimension of employment and that decent pay is another critical dimension which influences quality of life and independence of lifestyle.

Our own view is that volunteer work for disabled adults may be misconstrued by many well meaning professionals and parents with the result being that many more disabled persons will not gain access to real jobs because they will be perceived to be either "too low functioning" or "not ready yet". Furthermore, we are concerned that the tenet of volunteer work with no time limits will cast disabled persons in a negative light to nonhandicapped coworkers. It appears to us that work without pay is devaluing. Finally, we question whether a supported work approach to competitive employment has been used to the full extent with the problems which characterized the client(s) described in the Brown et al. (1984) paper.

It is our philosophy that jobs should result in pay which is not subsidized. We would favor a move to a minimum wage level for all clients with piece rate prorated contingent on performance over that minimum level. We do not support ridiculous pay levels of one dollar a day or other demeaning levels of remuneration. If a job is worth having, then there must be a decent pay level associated with it.

## Clients Need to Have Vocational Choices

We all have vocational choices. In many cases, when we choose to stop work, we can. If we choose to select a different job and have the necessary qualifications we can change fields. How many individuals with disabilities, especially severe disabilities, can say the same? As one reviews the type of services available it is clear that sheltered workshops, which number 5700 strong in the United States, are the principle choice for many persons with mental and physical disabilities. Within these workshops the main choices usually are: a) sheltered/benchwork employment for very poor pay; b) limited job placement with no support and follow-along; and c) occasionally, sheltered enclave arrangements in the community.

It is clear to us that clients need to have two types of choices (Gillespie, Personal Communication, October, 1984):

1) The choice to perform work in a variety of vocational settings and/or arrangements (i.e. with support in a real job; opportunity to work on a mobile work crew);
2) The choice to perform work in a variety of different vocational fields (i.e. technology, food service, clerical).

These are opportunities which historically have not been available and which very much need to be in place for students who leave school to enter the world of work for the first time as well as for those who are older and may want to change their career.

## Charity Work Is Not Acceptable

Individuals with disabilities must perform their job at a similar level of proficiency as their nonhandicapped counterparts. Maintaining disabled persons on the payroll because of their disability is not constructive over the long run for those persons/or other disabled individuals who seek employment. In our experiences of using a supported work approach to competitive employment (Wehman & Kregel, 1984), it is clear that initial client training by the job coach or on-site staff person is a major factor in persuading the employer of the individual's commitment to employment. This approach is also a reflection of how serious the client and staff person feel about employment.

Those professionals actively involved in job placement may be faced with the issue of whether to maintain a client in a job that is not being performed well. An employment specialist who is closely involved with the client and the job site often knows before the employer does the level of progress and adjustment being made by the client. This progress or lack of it may signal the need for movement to a more appropriate job. Such communication and partnership with the employer can only serve to tighten the relationship and respect the employer will have for the client and trainer.

## Training Must Reflect Local Labor Market Needs

As noted in the previous section working with business and industry will enhance employment prospects for those with disabilities. Surveys of local businesses and industry should reveal potential appropriate jobs for persons with disabilities. General screening techniques such as checking classified advertisements and contacting employment agencies and Chambers of Commerce should reveal not only types of jobs available but also what jobs are most often available. Further contact by phone or in person with specific employers gives one an even better idea about the types of job skills required and the rate of turnover on a particular job. This kind of information must be incorporated into school and community agency vocational training programs in terms of the types of jobs adolescents and young adults with handicaps are trained to enter. For example, a school in a community where there is always a need for farm laborers does its' students a disservice by training all the mentally retarded students in a year round food service vocational training program. On the other hand, training someone to be a farm laborer will be in vain unless the specific methods used on local farms are trained in real work settings.

One way to assure that training reflects labor market needs is to establish a business advisory board that provides continued input into your training program (Wehman & Barcus, 1984). This board can also help with public relations and educational efforts between agencies and employers. Another method involves assigning a staff person to regularly assess the community for jobs and to work with businesses in formulating cooperatively sponsored training programs.

## Parents Must be Involved in the Employment Process

Many parents and guardians are resistant to the idea of their son or daughter being placed in a competitive job in the community. Although we are just beginning to systematically study the reasons for this recalcitrance (Venn, DuBose, Merbler, 1977; Hill, Seyfarth, Orelove, Wehman, & Banks, 1985), it is understandable in view of most educational and rehabilitation programs that emphasize the limitations of citizens who are retarded and do not prepare them for real work. It is important to alleviate the fears of parents and to help change their negative attitudes because such fears impede the employment possibilities for many clients. For example, parents may be afraid for their child to learn to use public transportation or they may feel that their child will be taken advantage of on the job by coworkers. Parents may also not understand that they cannot visit a job-site to check on things or to complain to an employer as they may have done with school personnel. Most importantly, families have to know exactly what happens with social security and medical benefits once their child begins to work (Goodall, Wehman, & Cleveland, 1983).

Several strategies have been proposed for increasing parent participation in the employment process (Moon & Beale, 1984; Wehman, 1981). First, parents of retarded workers can form advisory committees to work with other parents who may be reluctant for their children to work. Second, the schools must change their preparation of students for work and get parents involved from the elementary grades. Third, professionals involved in the job training of citizens who are retarded must discuss openly with parents the concerns and try to resolve the problems before a job placement is made. Whether the problem is logistical (i.e., transportation, schedule, SSI) or attitudinal, a parent or guardian who is not supportive probably translates into a client who will not make it on the job. Finally, once a parent does agree to the placement of their son or daughter on a job, regular communication must persist so that the parent knows that training and guidance are always available.

## Parents Must Be Knowledgable of The Vocational Alternatives Available and Social Security Laws

Hand in hand with the need for parents to be involved in the employment process is the need for them to be educated about the continuum of employment options that should be available for their son or daughter who has a disability (Anderson, Beckett, Chitwood, & Hayden, 1984). They also have to be informed about how their son or daughter's work can effect the family's financial situation. The misunderstanding of their child's employment potential in conjunction with the fear of losing government benefits are probably the major reasons for lack of parental support and involvement in the process.

Historically, it has been the action of parent groups that has ultimately improved services for citizens with disabilities (i.e. Public Law 94-142 and IEP guidelines). In the case of post-school services, however, many parents are not aware that these programs are not mandated like school special education services and that their children are not entitled to services by any particular agency after graduation. It is probably the powerful lobbying of parent groups that can change adult service provision much as it has changed the services provided by schools.

Even in communities where some employment options exist, the entire array of nonsheltered work is typically not available. In order for parents to help change service provision, they have to be given information on model employment programs across the country and on federal and state initiatives designed to increase agency efforts to implement appropriate programs.

Concerning social security and medical benefits offered by the government to citizens who are retarded, families must understand that these benefits are not just taken away immediately after a job begins. All clients get a trial work period of up to nine months and a client is automatically reintitled to benefits if he or she loses the job within the first months of work (Wehman, 1981). In many cases, a person can be placed in a part-time job so as not to jeopardize the payment of medical benefits. Finally, in nearly all goverment cases where at least minimum wages are paid, the client will earn more than he or she was receiving in government subsidies. At any rate, professionals must understand the complicated social security payment system and be prepared to help families adjust to its replacement or reduction.

## Training Must Reflect A Community-Based Orientation

Not only should pre-employment training reflect local labor market needs, but this training should be conducted in community-based settings (Bernstein, Rudrud, Ziarnak, Ferrara, 1984; Wehman & Hill, 1982). Community-based training usually curtails the use of commercially available curriculum with materials related to horticulture, furniture refinishing, and benchwork activities because these activities do not match the jobs available in most communities (Wehman & Barcus, 1984). This type of training also requires the use of actual job settings at least part of the time which means that staff members will have to continually assess the community and establish relationships with business and industry. Even when early training occurs in a simulated setting, materials and the physical layout of the setting must match precisely jobs which have been carefully analyzed.

Community-based training will require most school and adult programs to make several changes in service provision. For example, transportation for staff and clients to settings in the community will have to be arranged. Insurance policies will have to be acquired that cover teachers and students while in settings outside the schools or adult facility. Finally, staffing and schedule patterns will have to be rearranged so that certain employees can devote full time to job development, job-site training, and client follow-up. Our experience has shown that for a full-time job trainer, the maximum caseload should be six to 10 which permits approximately one placement every six weeks to two months. For more severely handicapped students, the caseload may have to be smaller.

School-based vocational programs which are oriented toward employment should also include at least two hours per day of training in community-based job sites for 12-15 year old students. For older students, at least half their day should be spent in the community. In addition to this time spent on training actual job skills, more time should be allotted to training related skills such as transportation and banking in natural settings (e.g., Shafer, Inge, & Hill, 1984).

Community-based training of specific and related job skills is essential because it not only prepares the future worker but also because it exposes employers and coworkers to the potential of the citizen who is handicapped.

## School to Work Transition Must Be Planned

Although most school special education programs have a vocational training component, few of these programs have guided students into meaningful employment opportunities. This is borne out in several statewide studies indicating the extremely high unemployment rates of young adults who have recently graduated from special education (Hasazi et al., 1982; Mithaug & Horiuchi, 1983; Wehman et al., in press). Fortunately, the federal Office of Special Education and Rehabilitative Services has made school to work transition a national priority and has begun to set forth policies and provide special discretionary funds to agencies that are establishing model transition programs (Will, 1984). We see the school to work transition process for a student with a disability involving three key components including: a) an appropriate school program; b) formal individualized plans involving parents and the entire array of agencies responsible at any time for service provision; and c) multiple, quality options for gainful employment and meaningful post-school training (Wehman, Kregel, & Barcus, 1984).

Critical characteristics of an appropriate secondary school program include a longitudinally planned, functional curriculum, an integrated learning environment, and community-based service delivery. A longitudinal, functional curriculum implies that students begin developing vocational skills at an early age with increasing involvement as they become older. Early training during the elementary years must emphasize general work related skills such as attending to task, following schedules, completing assignments, independent mobility, grooming skills, and appropriate social interactions. Secondary training must be based on specific skills required in actual local employment situations, and youth should receive training in several potential types of jobs. By the time a youth is ready to graduate, a specific job for which he or she has been trained, should be identified for full time placement.

The focal point of the transition process is the development of a formal, written plan for each student. Such a plan should be developed four years prior to graduation and modified yearly until the student has graduated and is working successfully. The plan can be part of the IEP during the school years and a component of the client's Individualized Written Rehabilitation Plan (IWRP) or other community service agency plan. The transition plan must specify throughout the years who is responsible for each phase of job training and follow-up. It is critical that all agency representatives meet regularly with the parents to adapt the plan and monitor its implementation. Although the agency assuming major responsibility for services will change over time, participants of the "transition team" should remain the same to assure continuity of services.

The result of a functional school program and meaningful transition plan should be gainful employment. However, this kind of successful transition cannot occur until communities provide many different vocational alternatives for persons with all types of disabilities. Some of these options include: a) regular, competetitive employment for citizens with mild handicaps (Brolin, 1982); b) competitive employment with on-going support for citizens with moderate and severe handicaps (Wehman & Kregel, 1984); c) sheltered enclaves in industry; and d) specialized industrial training (Bellamy, Horner, & Inman, 1979). In planning for transition, available options must be evaluated since these outcomes will determine curriculum objectives and the method of service delivery. When appropriate alternatives do not exist, parents and agencies must work together to create options.

## Conclusion

In summary, there are many essential components of effective employment programs for citizens who are developmentally disabled. Two related components include the availability of vocational training and jobs in integrated environments or environments where jobs are principally performed by nonhandicapped workers. Third, vocational training must not only occur in real community job settings, but it must also reflect local labor market needs. A fourth component is the availability of vocational choices to individuals with disabilities such that these people and their families not only can choose to perform in a variety of settings but also in a variety of fields. A fifth component is the provision of decent pay as a consequence of meaningful work. Volunteer work or extremely low levels of pay may cast disabled persons in a negative light to nonhandicapped workers and in some cases may be self-devaluing to a worker. A sixth and related component is the provision of intensive and long term training procedures to ensure that workers with disabilities perform their jobs at a similar level to their nonhandicapped coworkers. Charity work does not justify decent wage levels. The seventh and eighth components involve parent education and parent participation in the employment process. Parents must understand the benefits and consequences of paid employment for their children and they must actively support efforts to achieve this if communities are ever to offer the full array of appropriate vocational alternatives. Finally, young adults with developmental disabilities must be formally and systematically moved from school to work through the work of parents and agencies working together to develop individual, written transition plans.

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# A SUPPORTED WORK APPROACH TO COMPETITIVE EMPLOYMENT OF INDIVIDUALS WITH MODERATE AND SEVERE HANDICAPS

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## Abstract

The purpose of this paper is to discuss how a supported work approach can improve the competitive employment opportunities for moderately and severely handicapped people. In this paper we emphasize the importance of competitive employment and describe the four major components of a supported work approach to nonsheltered employment. These are: job placement, job-site training, on-going assessment, and job retention. Also discussed are specific proposals for integrating a supported work system into sheltered workshops, community service programs, and secondary special education programs. A major conclusion of this paper is that significant policy and service delivery changes are necessary in order to overcome the extraordinarily high rate of unemployment among moderately and severely handicapped people.

# A Supported Work Approach to Competitive Employment of Individuals With Moderate and Severe Handicaps

Severely handicapped individuals do not participate in the workforce to the same extent as nonhandicapped citizens. Today, despite improved public awareness of the rights of severely handicapped persons and significant increases in the number of day programs for adults (Bellamy, Sheehan, Horner, and Boles, 1980), hundreds of thousands of potentially employable individuals remain idle. Unemployment rates of 50 percent to 75 percent (U. S. Commission of Civil Rights, 1983) and average annual wages of $414 for retarded workshop clients (Whitehead, 1979) provide a dramatic description of the current deplorable state of affairs. Failure to incorporate persons with moderate and severe handicaps into the labor force wastes a valuable human resource. The cost of dependency in terms of public income maintenance and other forms of assistance places a tremendous strain on our nation's economy. Even greater are the human costs of idleness and dependency on the lives of severely handicapped people.

Research and demonstration activities during the past 10 years have resulted in significant improvements in the vocational training and placement of persons with severe handicaps. Early emphasis was placed almost exclusively on training severely retarded and multiple handicapped individuals to perform sheltered work tasks (Bates, Renzaglia, & Clees, 1982; Bellamy, Peterson, & Close, 1975; Gold, 1972; Hunter & Bellamy, 1977; O'Neill & Bellamy, 1978; Wehman, Renzaglia, Bates, & Schutz, 1977). Recently, additional efforts have been directed toward training and placing severely handicapped workers into less sheltered or nonsheltered settings which focus more on competitive employment.

For example, several investigators have reported success with job placement, job site training, and follow-up of moderately and some severely retarded clients. Sowers, Connis, and Thompson (1979) described the placement results of the

University of Washington Food Service Training Program which has clearly been one of the forerunners in this area. This program continues in a successful manner. In a similar vein, Kraus and MacEachron (1982) published the results of the Transitional Employment program for mentally retarded persons. In this report, it was found that participants' work behavior, ability to meet job requirements, and wages were predictors of competitive placement. Brickey and his colleagues (Brickey & Campbell, 1981; Brickey, Browning, & Campbell, 1982; Brickey, Campbell, & Browning, 1983) have also done an excellent job of placing, training, and tracking mentally retarded graduates of sheltered workshop programs. Brickey's work, in particular, highlights the cost-effective features of sheltered workshop programs that provide regular and systematic follow-up of placed clients. In Vermont, Williams and Vogelsburg (1980), have been active in demonstrating the competitive employment capabilities of moderately and severely handicapped workers in nonsheltered settings. Over 40 clients, primarily from adult day programs, have been successfully placed in the last two years.

In our own work over the past five years we began with simple case study demonstrations (e.g., Wehman, Hill, & Koehler, 1979) and have since moved to benefit cost analyses of our placed clients (Hill & Wehman, 1983) as well as an on-going follow-up of client progress (Wehman, Hill, Goodall, Cleveland, Pentecost, & Brooke, 1982; Wehman, M. Hill, J. Hill, Brooke, Ponder, Pentecost, Pendleton, & Britt, 1984). To date, over 150 clients have been placed into competitive employment and approximately 55 percent are still working. The median measured intelligence quotient of those clients was 47 with the majority being labeled moderately mentally retarded. Kochany and Keller (1981) have described some of the reasons our clients fail to maintain employment. Major reasons include parental dissatisfaction, transportation breakdowns, client maladaptive behavior, and changes in employer policies. In addition, some clients move away or simply wish to change jobs after a period of time.

Competitive employment is usually superior to placement in any type of sheltered work environment. It offers the possibility of dramatically improving an individual's lifestyle while resulting in tremendous financial savings for social service agencies. Competitive employment allows persons with moderate or severe handicaps to earn significant wages and receive fringe benefits not available to workers in sheltered settings. The work performed in competitive environments is often more meaningful and challenging to the individual. It also offers the greatest opportunity for long-term job retention and advancement. Competitive jobs are usually not affected by lack of available work or the seasonal variability that often plague sheltered work programs. Perhaps most important is the ability of competitive employment to facilitate the integration of severely handicapped individuals into all facets of community life. Opportunities to travel more independently, utilize retail environments, and develop friendships with nonhandicapped coworkers are greatly enhanced for individuals working in the competitive sector.

Competitive employment also possesses a number of other significant advantages. It can lead to improved perceptions of handicapped workers by parents and policymakers. If parents become convinced that their child can succeed in competitive employment and make a meaningful wage, they may be more likely to take the major risks involved in working out transportation problems, overcoming Supplemental Security Income (SSI) disincentives, and providing support to their son or daughter. Policy makers are more likely to be impressed by vocational training efforts which result in placement in competitive employment. It is unreasonable to expect legislators to continue to provide millions of dollars annually to support programs which result in workers making a few dollars a week. Competitive employment placements are most persuasive in seeking greater funds for continued job placement efforts. The benefit cost analysis data of Hill and Wehman (1983) strongly suggest that competitive placement programs can actually result in long term savings to taxpayers.

What we need to know, however, is the best way to place and retain moderately and severely handicapped individuals into competitive employment. It is evident that the traditional model of placement with no intensive job site training and follow-along does not work for most moderately and severely handicapped people. Our experiences as well as those of many other investigators referenced earlier document this fact along with the reality of thousands of severely handicapped people not receiving access to rehabilitative services because they are not deemed to be "employable".

In this paper we will present a model which has worked effectively for almost six years. We call it supported work because clients receive staff support in differing degrees of intensity and depending on their unique needs. A detailed description is provided of how supported work can be applied to improving competitive employment opportunities for moderately and severely handicapped people who typically have been unemployed in society. It is important to note that supported employment can refer to other approaches to facilitating paid work for severely handicapped persons. For example, a recent U. S. Dept. of Education, Office of Special Education and Rehabilitative Services initiative (1984) characterizes supported employment as paid work which usually occurs in regular work settings. It may involve competitive employment but might also involve sheltered enclaves, mobile work crews, sheltered industries or other creative approaches to improving employment opportunities. The critical aspect of this U. S. Dept. of Education initiative is the focus upon the historically or chronically unemployed severely handicapped population.

## The Supported Work Model

A supported work approach to competitive employment involves highly structured job placement, individualized training, and job retention of clients with moderate and severe handicaps. It is characterized by intensive job-site training in integrated, community-based employment settings. The model is applicable for use with large numbers of individuals who have had limited previous exposure to competitive work environments. It can be successfully implemented by public school and community service programs in both urban and rural areas. The supported work model contains four major program components: 1) a comprehensive approach to job placement; 2) intensive job site training and advocacy; 3) ongoing assessment of client performance; and 4) a systematic approach to long term job retention and follow-up. Table 1 summarizes the principle components and associated characteristics of the supported work model.

Although it is probably not necessary for all handicapped persons, the supported work model is suitable for use with large numbers of handicapped individuals in both public school and community service programs. The model is generally intended as an alternative vocational outcome for persons unable to succeed or gain entrance to traditional public school work-study programs or monitored employment programs operated by rehabilitation facilities. Within public school settings, these individuals are usually served in programs for students labeled moderately mentally retarded or, in a few instances, mildly mentally retarded. Individuals labeled severely mentally retarded or multiply handicapped will also be prime beneficiaries of this approach although we have less data focusing exclusively on this population. Within community service programs, the model may be applicable to persons who are usually labeled by rehabilitation facilities as possessing severe disabilities and who are most frequently served in sheltered workshops or activity centers.

The supported work model possesses several key features that distinquish it from other approaches to job placement. In contrast to less intensive job placement approaches such as the "job club" (Azrin & Besalel, 1980) or selective placement (Rubin & Roessler, 1978), the supported work model relies on a comprehensive approach to job placement that actively deals with the non-work related factors which often stand as barriers to employment i.e. parental concerns. Another key difference between a supported work approach and other approaches is its extensive application of job site training and advocacy procedures. This emphasis allows clients to be placed who do not possess all the necessary work or social skills required for immediate job success. This represents a significant departure from traditional placement approaches that require the client to be "job ready" before placement can occur and alternative approaches that train a client to a specific level of mastery within a training environment prior to a final placement.

Other distinguishing features of the supported work model are its commitment to long term assessment of client performance and delivery of job retention and follow-up services. In sharp contrast to rehabilitation programs that typically provide follow-up services for several months, clients within the supported work model may receive systematically planned job retention and follow-up services for many years after initial placement. Finally, the supported work model is perhaps unique in its identification of a single "job coordinator" who is responsible for all facets of the placement, training, advocacy, assessment, and follow-up process. Rather than utilizing professional staff who specialize in a single aspect of the placement process, reliance upon a job coordinator greatly enhances continuity across all phases of the placement and follow-up process.

In the remainder of this section, we will discuss the four major program components of the supported work model in greater detail. Each component (placement, job site training and advocacy, ongoing client assessment, and job retention and follow-up) will be defined and illustrations will be provided to demonstrate the applicability of the model to public school and community service programs.

## Program Component I: Job Placement

The placement of the client into a job appropriate to his or her abilities is the first major component of the supported work model. A great deal has been written about job placement (e.g. Goodall, Wehman & Cleveland, 1983; Vandergoot & Worrall, 1979). However, we believe that the process of job placement involves more than simply finding a job for a client. Major aspects of the job placement process include:

1. A comprehensive assessment of job requirements and client abilities which results in an appropriate job match;
2. An active approach to handling non-work related factors such as travel, social security, and caretaker support.

The placement process begins by surveying the community labor market to identify the types of jobs that appear likely to have vacancies or high turnover rates and which appear to be within the capacity of potential clients. After specific jobs have been identified, an accurate analysis of work environment requirements must be completed. This process has been variously referred to as ecological analysis (Wehman, 1981), top-down curriculum (Brown, Branston-McClean, Baumgart, Vincent, Falvey, & Shroeder, 1979), or job analysis (Vandergoot & Worrall, 1979). It is critical that adequate detail be provided in terms of job requirements, characteristics of the work environment, and other features which may influence job retention.

Initial client assessment is conducted concurrently with the job development and analysis activities. A multifaceted approach to client assessment is employed. Information is obtained concerning client adaptive behaviors, parent/caretaker attitudes, transportation possiblities, the client's expressed willingness to work, and other relevant factors. In addition, the assessment will determine the client's current ability to perform some of the vocational skills that may be required in the targeted job areas. An inability to perform a large number of these skills does not preclude a client from placement, since a major strength of the supported work model is its ability to place individuals who do not possess all the work skills needed for immediate job success. However, if the client has not received at least a minimal amount of training through a pre-employment vocational program, the placement and retention process will take a great deal more time and, in the long run, will be more costly to the agency providing the service.

The results of work environment analysis and initial client assessment can be used to determine an appropriate job match. For example, how many of the skills required by a particular job is the client currently able to perform? This information can be used to project the amount of staff time that may be required during the early stages of employment. If a client is being considered for a position on an evening or weekend shift, how will the client get to and from the job? Public transportation may be limited at these times, and alternative transportation arrangements may be required before placement can occur. It is also important to consider whether the client has expressed interest in the type of job under consideration. Our experience has shown that handicapped workers often have strong job interests and preferences. Placements made without regard for a client's expressed interests will frequently fail after a short period of time. These examples illustrate the necessity of matching both job requirements and client characteristics to ensure successful placements.

The second major aspect of the job placement process in the supported work model involves an active approach to handling non-work related factors such as travel, social security, and caretaker support. Within a more traditional placement framework, it is often accepted that the client or caretaker will handle most of these concerns if a job is made available. For persons with moderate or severe mental handicaps, job placement would be impossible or highly unlikely without this type of support. Arranging for alternative forms of transportation to and from work, assisting the client in dealing with changes in social security status, and addressing the natural fears of concerned parents requires the active involvement of a trained professional. In many instances, effective handling of non-work related factors will make the difference between a successful and an unsuccessful placement.

### Program Component II: Job Site Training and Advocacy

As noted earlier, on-the-job training is certainly not a new concept. However, in most employment models, a trained professional is not available early in the placement to actively intervene on behalf of the client. Employers are often viewed as solely responsible for training the client. Frequently, no specific training is provided. Instead, brief and infrequent follow-up checks or visits are made for a short time after the initial placement. In short, two major steps in the placement process are omitted, namely, specific skill training and adjustment to the work environment.

Our experience in placement and our communication with others using a supported work model strongly indicate that job site training and advocacy are essential features of the model. Job site training refers to direct instruction provided by a trained professional enabling the client to perform all skills required by the job. Advocacy involves noninstructional intervention on behalf of the client. Both job site training and advocacy are necessary to promote the client's initial adjustment to the work environment and long-term job retention.

Application of behavioral training strategies to vocational skills in nonsheltered or competitive work environments has received relatively little attention by researchers. Rusch has clearly been the leader in this regard with studies related to acquisition of selected work skills (Schutz, Joste, Rusch, & Lamson, 1980), time-telling (Sowers, Rusch, Connis, & Cummings, 1980), time on-task on the job (Rusch, Connis, & Sowers, 1980), reducing inappropriate self-stimulating behaviors (Rusch, Weithers, Menchetti, & Schutz, 1980), and selected communication training (Karlan & Rusch, 1982). It is apparent to us that the technology of behavioral training needs to be extended into nonsheltered work environments with individuals who heretofore have been considered poor candidates for competitive employment. We have barely begun to scratch the surface in this area. Applications of reinforcement principles, manipulation of antecedent stimulus conditions, and use of coworkers as peer trainers are all areas which require closer investigation.

Advocacy, or noninstructional intervention on behalf of the client, is the other principle feature of this component. In many cases, handicapped workers will need less time spent on training and more time spent on orientation to the new work environment. Advocacy may involve a variety of different activities on the part of the job coordinator, such as: responding to a supervisor's concerns about the implications of the client's disability (likelihood of seizures, use of medication, necessity of adaptive equipment or augmentative communication systems); working out communication problems and assisting the client in developing social relationships with coworkers; or communicating with parents/caretakers about how the job is going. Although the impact of planned advocacy has not been evaluated in the published literature, our previous experiences have taught us that this is an essential aspect of job retention.

The following example serves to illustrate the potential impact of planned advocacy efforts. If a job coordinator notices that a client is having a difficult time locating the employee cafeteria or vending machines, interacting with coworkers during breaks, and failing to return from breaks at the appropriate time, systematic advocacy efforts should be initiated. A supervisor or coworker may be identified who will agree to assist the client during these periods. The job coordinator may provide this "on-site advocate" with information about the client's interests and abilities, allowing the individual to more effectively communicate and interact with the client during breaks. The individual may agree to help the client obtain lunches or snacks in the employee cafeteria and may remind the client when it is time to return to the work station. The job coordinator must make certain to reward the individual for his or her efforts on behalf of the client, monitor the situation to ensure that the client continues to receive assistance as needed, and see that these activities do not place too great a burden on the supervisor or coworkers. Eliciting the aid of a supervisor or coworker is an effective method of fading the involvement of the job coordinator at the work-site and, at the same time, significantly improves the client's chances for long-term job retention.

## Program Component III: Ongoing Assessment

A distinctive feature of a supported work approach involves ongoing assessment or monitoring of client performance. Typically, within more traditional job placement approaches, a rehabilitation counselor will place a client and then, at some point in the future, possibly check with employers to determine the adequacy of the client's job performance. When placing clients with severe handicaps, this type of "assessment" is often insufficient, because the worker may be terminated or quit the job before the counselor is even aware that any problem exists.

Ongoing assessment activities include the collection and analysis of subjective information obtained from employers, clients, and parents/caretakers, and the direct measurement of client behavior. Once a placement is made, there is an immediate need to gauge the employer's perceptions of the worker's performance. Initially, supervisors' evaluations should be obtained approximately every two weeks to identify any potential problems or employer dissatisfaction. When a problem is identified, this subjective information should be followed by direct measurement of the client's behavior to determine the scope of the problem and to identify potential intervention strategies. After the job coordinator has intervened to correct any problems in client performance, the results of the intervention program should be validated by again asking the supervisor to evaluate the worker. This process will ensure that improvement in the client's work performance, documented through direct measurement of behavior, is adequate from the employer's point of view.

In the same manner, the client and his or her parents/caretakers should be assessed on a regular basis to determine their satisfaction with the job placement. Identifying any concerns may allow the job coordinator to intervene before the client leaves the job. Although quantifiable data is the most desirable, in some instances verbal feedback to a job coordinator may be sufficient. In all cases, the amount of assessment data collected is clearly related to variables such as the ability level of the client, the amount of staff available for data collection, and, above all, the specific need for data to evaluate a certain problem.

## Program Component IV: Job Retention and Follow-up

Follow-up, the fourth component of the model, is an activity or service consistently referred to in the rehabilitation system. However, the amount and nature of follow-up services actually provided to clients remain unclear. In a recent analysis of the Projects With Industry Program (Reismer, Haywood, & Hastings, 1983), follow-up was found to be a frequent activity of those projects. Yet, the type and quality of follow-up services and their impact on job retention were not assessed.

Systematic follow-up services are critical for a number of reasons. The client may lose enthusiasm and display a reduction in productivity after the initial excitement about the new job has subsided. A change in work schedule may require the job coordinator to retrain the client on his or her new bus schedule. Modifications in work assignment or a new supervisor may necessitate additional training on new job tasks. Similarly, a change in the home situation may adversely affect job performance and require follow-up services which involve the client's parents/caretakers. Maintaining contact with the client, employer, and parents after the initial training period will allow the job coordinator to foresee potential problems and prevent their occurrence, rather than delaying intervention until the problem has escalated into a crisis.

A supported work approach to competitive employment views follow-up services as long-term activities that are provided over a period of years. As indicated above, changes in supervisor, work assignment, or home situation may endanger a client's job retention years after initial placement. Traditional placement approaches that terminate follow-up services within a period of months appear unable to meet the job retention needs of severely handicapped clients, who are often adversely affected by changes in their home or work environments. Hill, Cleveland, Pendleton, and Wehman (1982) list regular on-site visits to employers, phone calls, review of supervisor evaluations, client progress reports, and parent evaluations as effective follow-up strategies which promote job retention. Ultimately, job retention and follow-up may be the most crucial component of the supported work model, since moderately and severely handicapped workers are often immediately at risk of losing their jobs in competitive environments unless some type of retention plan is devised. Although this strategy has been viewed by skeptics as being too expensive, the benefit cost analysis of Hill and Wehman (1983) seems to refute this notion.

## Implications for the Supported Work Model in Different Service Delivery Settings

Although the previous section provides important information regarding the supported work model, the model is of little value if it cannot be applied by the principle service delivery systems serving moderately and severely handicapped persons. These service delivery settings include both public schools and community service programs such as sheltered workshops and adult day programs. The section which follows specifically addresses the problems encountered in these settings and recommends changes in current policies that may help to solve these problems.

## Typical Problems Encountered in Service Delivery Settings

Public schools and community service programs each present their own unique set of problems for implementation of the supported work model. For example, relatively few university training programs equip special education or vocational education teachers with the specific competencies needed to train and place students into competitive employment, work with employers, and develop linkages with adult service systems. These difficulties have led to a minimal amount of job placement by school system personnel of handicapped students into jobs which pay unsubsidized wages.

Community service programs also possess many inherent problems that inhibit attempts to implement the supported work model. Funding limitations make it extremely difficult for these programs to recruit and retain qualified staff. Significant staff turnover is not uncommon. As the Bellamy, Sheenan, Horner, and

Boles (1980) study noted, relatively few of the adult day programs surveyed focus extensively on vocational training and/or placement. Often community service programs are heavily influenced by volunteer groups or associations which may seek to protect handicapped adults and maintain nonvocational, developmentally-based programs.

The obstacles facing service providers attempting to implement the supported work model in public schools and community service programs are numerous and complex. Rather than dwell on these obstacles, however, it will be much more constructive to focus our attention upon ways to overcome these problems. The policy recommendations listed below begin to address some of the ways in which the supported work model can be integrated into existing service systems.

## Strategies and Policies for Overcoming Public School Problems

Based upon the success of the supported work model with moderately and severely handicapped adults (Wehman, et al., 1984) it appears that this approach to job placment must be utilized fully for students who are still in public school. Such an undertaking will require extensive changes in the curriculum used with severely handicapped students, the organization of secondary programs, and the content and nature of university training programs (Brown, Shiraga, Ford, VanDeventer, Nisbet, Loomis, & Sweet, in press). We have outlined below several specific policy changes which must occur to allow the application of the supported work model to the training and placement of severely handicapped students in secondary programs.

1. Public school special education programs must make a clear philosophical commitment to place and maintain students with moderate and severe handicaps into competitive employment. Current vocational training efforts frequently emphasize the acquisition of "prevocational" skills, evaluation activities, or training on isolated vocational tasks that bear little similarity to the skills

needed for success in competitive settings. Relatively little attention is often paid to the placement of students in jobs which pay unsubsidized wages. Follow along of the students' progress is not provided. Policies must be developed at both the state and federal level that will facilitate the implementation of the supported work model. New roles must be created for vocational placement specialists to function as job placement coordinators within secondary programs for severely handicapped students. Local school systems should be encouraged to develop systematic transition programs as well as support part-time employment for severely handicapped students (Clarke, Gruenwald, Abramovitz, & Bellamy, 1980). Transition programs will enable systems to coordinate their job placement efforts with those of other agencies in their community. State education agencies can play a leadership role in developing and conducting follow-up surveys that will serve as a measure of program effectiveness.

2. State and federal agencies must carefully monitor service delivery models, curricula, and instructional practices to facilitate implementation of all components of the supported work model. Students confined to segregated educational facilities cannot acquire all the social and interpersonal skills required for success in competitive employment settings. Monitoring activities must guarantee students access to integrated educational environments. In addition, significant changes must occur in curriculum development activities for severely handicapped students at the intermediate as well as secondary levels. No longer can special educators be satisfied to move students through non-functional developmental sequences. Functional curricula derived through ecological inventory approaches (Wilcox & Bellamy, 1982) must be incorporated through each student's intermediate and secondary programs (Wehman, 1983). The supported work model also implies a reliance upon a community-based approach to instruction. Strategies must be devised to overcome the transportation problems, liability

concerns, and administrative constraints which currently hinder efforts at community-based programming (Wehman & Hill, 1982).

3. Special education personnel preparation funds should be used to stimulate the development of university training programs that prepare specialists in the vocational training and job placement of students with moderate and severe handicaps.

Very few teachers are currently prepared at either the undergraduate or graduate levels to perform the job development, job analysis, job placement, job-site training, and follow-up activities required by the supported work model. New training programs must produce vocational placement specialists who possess the ability to work effectively with employers and personnel managers, coordinate their efforts with community service agencies, and provide quality on-site training and follow-up services.

## Strategies and Policies for Overcoming Problems in Community Services

Several major policy changes and subsequent strategies need to be considered if community service programs such as sheltered workshops and adult day programs are to substantially improve their rate of job placement and retention. The suggestions which are made here are derived from policy reports, personal observations, and frequent interactions with community service personnel in many states.

1. Public policy commitments and clear financial inducements must be established to encourage placement of people with severe handicaps into competitive employment. Most community service programs do not have a specific mission which emphasizes the competitive employment outcomes and service provisions which purportedly lead to paid employment. Policies should be generated at both the local and State levels that prioritize client employment as a critical aspect of any program. The policies should include a clear financial inducement for

competitive employment placement. As noted earlier, community service personnel receive no positive financial consequence for job placement and retention. For example, substantial cash installment payments for placement and, eight months to 10 months later, retention, would put contingencies on job placement and also job maintenance. This form of monetary contingency would greatly facilitate the use of the supported work model or a very similar system. In addition, a much longer follow-up period of 8-10 months must be used rather than the normal 60 days which many rehabilitation facilities follow. Workers with moderate and severe handicaps require much longer periods of work adjustment.

2. Rehabilitation agency officials who designate programs as vocational training and placement vendors for services should encourage or stimulate use of a supported work model. In order for sheltered workshops or other community service programs to receive rehabilitation funds for client services, they must be approved as a vendor (Revell, Wehman, & Arnold, in press). During this approval process, officials should encourage the payment of monies for application of a supported work model of job placement. Similarly, rehabilitation counselors and other referring sources who are paying for workshop services must demand more in the way of competitive employment placement. When counselors become knowledgeable about the work potential of clients of severe handicaps, they may be more motivated to require specific supported work services from community service programs.

3. More funds need to be directed to sheltered workshops and other community service programs to develop pre-employment programs closely linked to jobs in competitive employment. A widely held assumption has been that learning general work habits and acquiring bench work skills will prepare individuals to perform competitive employment tasks in regular work settings. Our placement experiences with severely disabled clients do not support this notion. Most of these

individuals need training in specific vocational skills and opportunities to learn how to interact with nonhandicapped people in community settings. The development of more work crews or sheltered enclaves in the community, as well as in-house training programs, would broaden the continuum of locally available vocational options and greatly facilitate entry into unsubsidized employment. Developmental Disabilities monies, the Joint Training Partnership Act, and local mental retardation funds may all be used to support pre-employment programs. Recently, the Social Security Act (Title XIX) Medicaid Waiver has been used in some states to successfully implement vocational training activities.

4. Personnel in community service programs, including sheltered workshop and other rehabilitation staff, must receive extensive training in job placement, job site behavioral training, and follow-up strategies. Federal policymakers need to consider expending developmental disabilities, special education, and rehabilitation training funds to train community service providers. Specifically, a critical need exists for adult day program supervisors, instructors, residential counselors, case managers, respite care providers, and administrative staff who understand the importance of employment and the potential of the supported work model. In addition, significant changes should be made in university rehabilitation programs. Preservice programs, in particular, do not sufficiently prepare personnel to effectively implement the supported work model. Much more attention must be given to active job placement, training as opposed to counseling techniques, and follow-up strategies. As clients with more severe handicaps are referred for services, counseling skills will wane in importance and behavioral training skills will become imperative.

5. Demonstration programs need to be established for innovative community service day programs which focus on employment. In recent years substantial numbers of special education and rehabilitation demonstration projects have

validated the usefulness of the supported work model. However, few demonstration activities have been implemented in community mental retardation programs. Many more programs are needed that incorporate the most effective methods currently available for training and placing individuals with severe handicaps into jobs.

## Concluding Remarks

There is a very limited likelihood that persons with moderate and severe handicaps will earn meaningful wages in real work without some approach like the one described in this paper. It is apparent to us that the type of structure and long term commitment which is described in the supported work approach is necessary to facilitate greater opportunity for competitive employment. This paper has addressed the employment needs of the severely handicapped persons and the high rate of unemployment among disabled people in the United States today. We have recommended an approach which has worked with many moderately mentally retarded persons in the past (Wehman et al, 1982; 1984) and which requires consideration for greater accomodation into local service delivery systems. To this end, numerous public policy recommendations were made, both for public schools and also community service adult day programs and sheltered workshops. Only when more attention is paid to significantly modifying these service delivery systems to reflect employment-oriented outcomes will moderately and severely handicapped persons gain entry to the nation's labor force in large numbers.

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# SUPPORTED WORK MODEL OF COMPETITIVE EMPLOYMENT FOR PERSONS WITH MENTAL RETARDATION: IMPLICATIONS FOR REHABILITATIVE SERVICES

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# Abstract

Numerous applications of the supported work model of employment services demonstrate the ability of severely disabled mentally retarded persons to work competitively. Based on those demonstration efforts, this article describes how a supported work program can serve as the central job-related service component to placing and retaining a variety of persons with severe disabilities in competitive employment. The implications of these demonstration efforts on state vocational rehabilitation agency case service expenditures, staffing, and programming efforts are also discussed. Funding and programming options for state agencies to use in initiating a more intense, client oriented employment service approach are reviewed. State vocational rehabilitation agencies must now take the lead in integrating the supported work model into community services if the federal-state vocational rehabilitation program is to fulfill its responsibility for meeting the employment needs of persons with severe handicaps.

# Supported Work Model of Competitive Employment for Persons With Mental Retardation: Implications for Rehabilitative Services

There is increasing evidence that severely disabled mentally retarded persons can work competitively in nonsheltered employment provided that the appropriate support systems are in place (Brickey, Browning, & Campbell, 1982; Brickey & Campbell, 1981; Kraus & MacEachron, 1982; Revell, Arnold, Taylor, & Saitz-Blotner, 1982; Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982; Sowers, Thompson, & Connis, 1979). However, the placement options available for severely disabled mentally retarded clients have been usually limited to (a) sheltered workshop placement, (b) competitive placement without the time for job site training and follow-up, and (c) refusal for services due to a perceived limited potential for gainful employment.

At one time it was considered highly unlikely that individuals diagnosed and classified as moderately retarded or severely retarded could work competitively. However, with a supported work model it is evident that many of these individuals can gain employment and retain employment (Wehman & Kregel, 1984). Successful demonstrations of how to implement a supported work model may provide a fourth option for retarded clients; namely, placement into competitive employment with professional staff support.

A supported work model provides for direct training of the client at the job site. Daily training and advocacy is given by a professional staff person until the client successfully demonstrates independence. At that time, staff begin to systematically reduce their time at the job site. The components and cost effectiveness of a supported work model have been described earlier (Hill & Wehman, 1983; Revell & Arnold, 1984; Wehman, 1981; Wehman & Kregel, 1984). These components include 1) job placement, 2) job-site training, 3) on-going assessment and 4) job retention. Table 1 provides a checklist of the types of activities which correspond to this model. Essentially, in a supported work arrangement,

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assistance is provided by staff to help severely disabled clients not only gain employment but learn the skills at the job site, adjust to the work environment and ultimately retain the job. Employment is not wage subsidized, that is, employers immediately hire the client with their own funds thus being able to access the Targeted Job Tax Credit program. This approach is a much more individualized approach to job placement and retention. Counselors may purchase these services from rehabilitation facilities and other day programs which offer supported work services. Supported work may also involve placement into more sheltered settings like work stations in industry or sheltered enclaves; however, this report focuses exclusively on competitive employment.

The purpose of this article is to provide an overview of how supported work can fit into the rehabilitation process of service delivery for clients with mental retardation. It is time to move beyond isolated demonstrations and integrate this highly successful model into rehabilitation services in all parts of the country.

## Rationale for the Supported Work Model of Employment Services

The supported work model of employment services emphasizes placement and maintenance into competitive employment. Vocational rehabilitation counselors serving severely disabled mentally retarded individuals have traditionally depended heavily on the services offered by sheltered workshops. Workshops can provide services needed by persons with severe disabilities, and nationally many workshops are moving toward developing industrial work environments. However, the training and employment services offered by many sheltered workshops are significantly limited. These limitations, as documented in a number of studies and reports (U.

S. Department of Labor, 1979; U. S. Commission on Civil Rights, 1983; Perlman, 1978) include:

1. The vast majority of mentally retarded persons trained in sheltered workshops do not move to competitive level jobs.
2. The average earnings generated through sheltered work programs leave participants in these programs financially dependent on government, community, and family income supplements; sheltered work programs also offer minimal benefits, usually restricted to vacation and sick leave.
3. Participation in a sheltered work program usually requires a reliance on public subsidy to the facility for long-term placements. As a result, the participant is dependent on the community for both subsidized work and subsidized income, as well as numerous public relief benefits. This dependence on the community creates the perception that the severely disabled mentally retarded individual is minimally productive.

Many workshop programs depend heavily on labor intensive bench work contracts to generate income and work opportunities. The work behaviors and trade-related skills learned from, for example, assembly and disassembly activities performed in a sedentary work environment do not transfer well to industrial jobs identified as being within the potential abilities of mentally retarded persons currently in workshops. Therefore, traditional workshop programming provided in a nonindustrial setting neither prepares its clientele for competitive employment by offering industrially related experiences nor provides an opportunity for persons remaining in the sheltered work environment to move beyond substantial public subsidy.

Vocational rehabilitation counselors face significant difficulities when attempting to place severely disabled mentally retarded persons in employment outside of sheltered workshops without access to a supported work model. The rationale for the supported work model recognizes that the vocational rehabilitation counselor is primarily, in reality, a coordinator of services. A client who requires 40 to 80 hours of one-to-one job site follow-up after placement presents the counselor with a dilemma that is usually resolved by considering the client too severely handicapped for competitive employment. Hence case closure or placement into a workshop results.

Counselors who attempt to provide services using the state agency vocational rehabilitation program model are very familiar with the terms "not feasible for employment services." Some disabled persons do have vocational handicaps related specifically to their disability that are too severe and limiting to allow for return or movement into competitive employment. However, the success of applications of the supported work model of employment for mentally retarded persons clearly proves that many persons, earlier closed unsuccessfully or refused services because of the severity of their handicap, have successfully retained competitive level employment (Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982; Wehman, M. Hill, J. Hill, Brooke, Ponder & Pentecost, 1984). To these individuals, their lack of feasibility for services was a product of the limitations of the service options made available to them by the vocational rehabilitation program, and not solely a function of their own handicaps. By offering severely disabled mentally retarded persons intensive evaluation, orientation, training, and follow-up services at industrially-based job sites, many of these individuals can become and remain productive, financially independent, and fully integrated in their community.

## The Supported Work Model in the Community Vocational Rehabilitation Process

A supported work program does not supplant existing vocational service resources; it has a role as a complementary service within the full vocational process. For the severely disabled mentally retarded person, a supported work program can serve as a means from which the adjustment, training, and long-term case management areas of the process can revolve. The following is a description of how a supported work program fits into the community rehabilitation process.

Severely disabled mentally retarded persons are referred to vocational rehabilitation agencies typically by representatives of special education programs, community services, work activity or sheltered workshop programs, and families or friends. Prior to job placement, retarded individuals can recieve a variety of services including diagnostic and vocational evaluation, counseling, work adjustment, and vocational training. The difficulties inherent in effectively providing these preplacement services without access to a supported work program are reflected in high unemployment rates and poor client wages, unfortunately (U. S. Commission on Civil Rights, 1983). Severely handicapped mentally retarded persons have difficulties characteristic of their mental limitations in transferring and generalizing skills from familiar to nonfamiliar settings. Preparatory vocational services provided in isolation of the specific job and setting in which the trainee will work appear to have limited practical value (Rusch & Mithaug, 1980). The supported work program can assist those involved in the vocational preparation of retarded persons to:

1. Evaluate vocational needs based on work-related factors such as mobility, interpersonal skills, direction following, flexibility, and ability to self-monitor.
2. Identify the job classifications available to retarded individuals in their specific community.
3. Identify the employers and work settings offering job opportunities for mentally retarded persons.
4. Develop prescriptive training plans specific to the job class, setting, and potential employer.

By making this job-specific information available, staff working within supported work programs can offer an alternative to laboratory-based vocational evaluations and elongated, undefined sheltered workshop adjustment training. Also, awareness of this information will, in time, change the programmatic focus of those involved in preplacement training to a more industrially-based orientation.

Job placement and follow-up must be the primary service of vocational rehabilitation programming, and competitive level employment must be the primary goal. A supported work program is employer based, it is intense in its relationship with clients, and it provides a means for the retention of employment. It also offers those involved in the long-term case management of mentally retarded persons a resource for crisis intervention when job threatening situations occur after completion of the formal six-month follow-up. Because of its role in the preparation, placement, and maintenance of retarded individuals, a supported work program should be a central job related service component of the rehabilitation process.

## The Supported Work Model: Is It Effective?

In recent years, the number of programs utilizing a supported work model of job placement has increased gradually. This model is best utilized in programs where staff are not only concerned about placement, but equally about job retention and follow-up services. The following is a brief description of selected programs which are employing a system of supported work.

In Virginia at least two successful programs have stood the test of time and also replication. At Virginia Commonwealth University, the Rehabilitation Research and Training Center sponsors a program which, over the past five years, has made upwards of 150 placements with better than 80 clients still working (Wehman, et al, 1982). The median measured intelligence of these retarded individuals is 48, with many having been rejected from local rehabilitative services initially due to their expected potential. This program is based in greater Richmond as well as Norfolk and Virginia Beach, with most jobs in the hotel and restaurant industry. Over $700,000 has been earned by these clients cumulatively.

In a similar fashion, the Virginia Department of Rehabilitative Services sponsors Project Transition, a placement and retention project which is based in Northern Virginia (Revell & Arnold, 1984). This project has focused more on a broad range of mentally retarded persons, dually diagnosed mentally retarded and visually impaired individuals, and people receiving mental health services. The project started in 1979 and as of November, 1983, 148 clients have been placed in employment with 78 still working. Average wage for project clients is approximately $4.25 per hour, and many clients are getting full fringe benefits.

In the state of Vermont, Vogelsburg and Williams (1983) have implemented a project in Burlington and several other more rural areas which has led to over 58 placements of mildly and moderately retarded people over the past three years. In this program, which is expanding across the state, there is significant staff training at job sites and case manager follow-up.

At the University of Washington, there is also an excellent food service training program which has led to a number of placements over the years (Sowers, Connis, & Thompson, 1979). The encouraging aspect of this supported work program is that the State Development Disabilities Unit is promoting it across the state of Washington in many smaller local programs (O'Neill, 1983).

Brickey and his associates in Ohio have been active in using a modified version of the supported work model with sheltered workshop employees (Brickey, Browning, & Campbell, 1982). A most recent evaluation indicated that 53 mildly and moderately retarded individuals had been placed into a variety of entry level food service and custodial positions. Rusch, at the University of Illinois, also has provided leadership in this area with placements coming from their food service training program (Rusch & Mithaug, 1980). Kraus & MacEachron (1982), in similar fashion, employed the supported work model in the Transition Employment Program in Boston, as has Brown and his colleagues with severely handicapped students in the Madison, Wisconsin public school system (Brown, Nisbet, Ford, Sweet, Shiraga, & Gruenwald, 1982).

It should be apparent from this descriptive overview that successful programs are emerging. However, although programs utilizing a supported work model are moving out of the demonstration phase, there still is not the required translation into community service practice. These demonstration projects suggest that (a) the supported work model can be effective for placement and job retention, but (b) these demonstrations are not occurring in most community training programs serving the mentally retarded, such as adult day centers and sheltered facilities. Also, it is evident that state vocational rehabilitation agencies have not widely adopted the supported work model despite the successful applications of the model to employment services for severely handicapped persons. Hence the implications of this model must be interpreted cautiously.

## Implications of the Supported Work Model for the Vocational Rehabilitation System

Applications of the supported work model have successfully enabled disabled persons previously unemployable in competitive settings to retain full employment. The implications of the successful applications of the supported work model for the vocational rehabilitation system are numerous.

### Sequence of Services

The federal vocational rehabilitation process emphasizes a sequence of services usually consisting of vocational evaluation/vocational training/job placement. Before job placement is considered, clients are required to be trained and job ready. The supported work model to a large extent reverses the "train-place" methodology of traditional vocational rehabilitation programming and takes a "place-train" approach to employment services. By placing a professional staff person at the job site with the client, training specific to the job and individualized to the client takes place after placement. Given the predominant expenditure of case service dollars on formal work adjustment and skill training programs for clients, vocational rehabilitation administrators should consider the cost-benefit and the job retention issues involved in shortening formal preplacement training and redirecting case service dollars into staffing for supported work programs. Hence more funds will obviously need to be expended for the inservice training of (a) rehabilitation counselors to use this model and (b) facility and work adjustment staff to offer this service as vendors.

The supported work model focuses the vocational process on a job-client match. It attempts to identify early in the client's employment preparation the specific job and employer most appropriate for the individual. It also identifies the work and trade skills required by the job and the employer. The rehabilitation counselor responsible for coordinating the client's movement through the vocational process, by having access to job-client match information, can target requests for adjustment, training, and other services specifically to the identified job requirements.

## Continuum of Employment Services

The supported work model consists of numerous discrete job placement and follow-up services. These services may include client assessment and job analysis; use of industrially-based job orientation sites; job site supervision and employer/coworker education; and family counseling and client advocacy. These discrete services combine into a placement and follow-up methodology which allows many severely disabled mentally retarded persons to work competitively. It is a methodology substantially more client centered than the traditional job referral and irregular follow-up approach still used by many counselors responsible for a high volume of clients. If state vocational rehabilitation agencies are to become effective providers of services to mentally retarded persons with severe disabilities, agency direct service staff, through inservice training and through program restructuring, must become aware of and have access to these employment service methodologies.

## Application to an Expanded Severely Disabled Population

Current applications of the supported work model, originally targeted toward retarded individuals, are now expanding to serve persons with other mental, physical, or multiple disabling conditions. Persons with severe physical disabilities benefit greatly from industrially-based assessments, job analysis with possible resulting job modifications, and employer/coworker education. Persons with emotionally-related disabilities benefit from extended job site follow-up and client advocacy. It is clear that application of the supported work model is not limited to mentally retarded persons; it can be selectively applied to employment services for persons with a wide range of severe disabilities. Given the clear mandate for the federal-state vocational rehabilitation program to make services available which maximize the employment potential of persons with severe disabilities, the need for integration of the supported work model into the vocational rehabilitation process is clear.

## Funding Options for the Supported Work Model

Vocational rehabilitation administrators attempting to incorporate the supported work model into their service system are faced with difficult issues. Zero growth budgets; substantial cutbacks in alternative funding sources; hiring freezes and employee layoffs: there are all current trends in public programming, including vocational rehabilitation, which temper significantly the options available to administrators. However, current applications of the supported work model point to funding and personnel options which potentially provide a means for supporting adoption of alternative service methodologies.

### Federal/State Vocational Rehabilitation Funding.

Counselors serving severely disabled mentally retarded individuals are dependent at present on purchase-of-service arrangements with community adjustment and training service vendors. Frequently, a costly work adjustment program for a client results in placement in either a subsidized sheltered employment slot or on a waiting list for sheltered employment. Monies directed currently toward purchase-of-service for noncompetitively oriented programs could be redirected toward staffing of competitively oriented service methodologies. By placing limits, defined by objective progress reports and movement toward specified behavioral targets, on purchased adjustment services, the average client enrollment period in preplacement services could be shortened and dollars made available for alternative services.

### Fee-for-Service Arrangements.

The use of industrial enclaves and an orientation to preparing clients for competitive employment are growing trends in progressive sheltered workshop programming. Workshops which adopt an industrial orientation can become a provider of supported work job placement and follow-up services. State vocational rehabilitation agencies should encourage community service vendors to provide supported work services and incorporated the cost of the service into a fee-for-service agreement.

### The Job Training Partnership Act.

Programs utilizing variations of the supported work model are, as of November, 1983, operating in four of the fourteen Service Delivery Authorities in Virginia. These programs provide employment services to handicapped persons and are funded wholly or in part through funds made available by the Job Training Partnership Act (JTPA). These programs are supervised by the state vocational rehabilitation agency and provide intensive job site training and extended follow-up. JTPA funds are primarily used to support costs for training and employment staff and also client related expenses such as assessment, wage subsidies for on-the-job training, and transportation. The authority given to the local community in the JTPA program to determine needed services allows a great deal of flexibility in devising a supported work program which complements available services. The JTPA program design also encourages joint programming among the state vocational rehabilitation program, community mental retardation services, other public programs providing for services needed by persons with disabilities, and private vendors of services such as sheltered workshops. The JTPA program provides an excellent opportunity to expand the availablity of a service methodology, such as the supported work model, which emphasizes retention of competitive manpower in industry.

### Projects With Industry

The supported work model utilizes industrially-based assessment and orientation services, adjustment and skill training at the job site, and intense follow-up after employment. These services are consistent with the federal Project With Industry (PWI) model. Applications of the supported work model, on a formal or informal basis, utilize business advisory groups, a primary feature of PWI programs. As state vocational rehabilitation agencies prepare for possible direct participation in the federal Projects With Industry program, the supported work model provides a service option appropriate to PWI funding.

### Cooperative Programming.

Project Transition in Virginia is supported by a combination of JTPA, state and local mental health and mental retardation, and federal-state vocational rehabilitation funds. The project is administered by a local Community Services

Board program and supervised by the state vocational rehabilitation agency. Project staff, although not employees of the vocational rehabilitation agency, are housed within a local vocational rehabilitation office and work in close cooperation with state agency evaluators and counselors. The interagency nature of Project Transition has established a positive service and follow-up environment for project clientele; it has also made available a service which no one agency on its own has the resources to provide. This project is a good example of how multiple sources of revenue can be derived to underwrite structured employment programs.

These various funding options for the supported work model are not mutually exclusive. State vocational rehabilitation agencies having difficulty in effectively providing for the employment service needs of severely handicapped persons must review:

1. Current case service expenditure patterns and the impact on competitive placements which result from these expenditures.
2. Current agency staffing patterns, particularly among full service counselors who have traditionally depended on a now shrinking case service budget to serve clients and who spend a small percentage of their time on job placement and job retention services.
3. Supplementary funding available through JTPA, PWI, and other federal, state, and private resources which are oriented specifically to employment services for handicapped persons.
4. The opportunity for cooperative programming, both with other public agencies and also with the private sector.

Redirection of existing resources and utilization of supplementary funding and programming options present vocational rehabilitation administrators with the means to implement applications of the supported work model.

## Summary

There is little doubt that if mentally retarded and other severely handicapped persons are to have reduced dependence on Social Security disability income and other forms of government transfer payments, then competitive employment placements are essential. The recently funded Rehabilitation Research and Training Center at Virginia Commonwealth University is seriously investigating numerous research issues related to the competitive employment of mentally retarded individuals. A special focus of this Center, which is under the direction of the second author, will be the supported-work model (i.e., how it works, its cost effectiveness, and optimal ways to train staff in the model).

The federal/state vocational rehabilitation agency must effectively and efficiently assist mentally retarded and other persons with severe disabilities to retain competitive employment if it is to retain or possibly reestablish its credibility as a viable employment service program. Project applications of the supported work model have demonstrated its effectiveness in assisting severely handicapped persons to retain competitive employment. State vocational rehabilitation agencies both as a provider and a user of vocational rehabilitation services and are the public program responsible for the employment of persons with disabilities. These agencies must take the lead in integrating the supported work model into their own service programs and into other viable community resources, including sheltered workshops.

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## Table 1

### Checklist of Activities for the Supported Work Model of Competitive Employment

What is involved in helping the client get a job?

structuring efforts to find a job for client and matching client strengths to job needs

communicating with employers on behalf of client

planning transportation and/or travel training

emphasizing parents involvement in identifying appropriate job for client

communicating with social security representatives

What is involved in teaching the client a job?

providing behavioral skill training aimed at improving client work performance

providing necessary social skill training at job site

working with employers/coworkers in helping client

helping client and coworkers adjust to each other

What is involved in monitoring the client's job progress?

getting regular written feedback from employer on client progress

utilizing behavioral data related to client work speed, proficiency, need for staff assistance, etc.

implementing periodic client and/or parent satisfaction questionnaires

What is involved in helping the client keep a job?

implementing planned efforts to reduce staff intervention at job site

providing follow-up to employer through phone calls and/or visits to job sits as needed

communicating to employer if and when staff accessibility is needed

helping client relocate or find new job if necessary

# DEMOGRAPHIC ANALYSES RELATED TO SUCCESSFUL JOB RETENTION FOR COMPETITIVELY EMPLOYED PERSONS WHO ARE MENTALLY RETARDED

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## Abstract

Detailed client demographics are given from a longitudinal examination of a special job placement program (the supported work model) for mentally retarded persons over a six year study period. This investigation also examines the demographic differences in individuals who are maintained in competitive employment over six months versus those individuals who did not achieve a six month work history. Chi square analyses showed significant differences in over-six months and under-six months retention rates on the following variables: reading skill development (higher retention rates found for persons with more limited reading); differences in types of previous adult programs attended (higher rates for persons from community work crew-oriented programs); differences in guardian identities (higher rates for those who did not have a natural parent listed as a primary guardian); and sex differences which approached significant levels (higher retention rates for males). The implications of the findings on the improvement of vocational habilitation efforts are discussed.

# Demographic Analyses Related To Successful Vocational Outcomes For Competitively Employed Persons Who Are Mentally Retarded

Vocational programs which focus on competitive employment outcomes for individuals with mental retardation have been increasing in recent years (Rusch & Mithaug, 1980; Rusch, in press; Wehman, 1981; Wehman, Hill, Hill, in preparation). As the federal government has stepped up its interest in improving employment opportunities for persons with disabilities (Will, 1984; Elder, 1984), it is clear that much more needs to be understood about the selected demographic characteristics of disabled people as they relate to competitive employment outcomes. This type of information is critical for enhancing appropriate placements, counseling parents, designing training strategies, evaluating programs and formulating public policy.

There are, unfortunately, few published accounts of large groups of mentally retarded persons working over a long time periods. Edgerton (1983), of course, in his classic study has tracked one group of persons with mental retardation and examined vocational adjustment along with many other aspects of these persons lives. However, Edgerton does not provide the on-going and indepth assessments of employment and demographic data which would be helpful to those responsible for formulating national and state employment policies for disabled persons, as well as for those who are direct service providers. The report by Sowers, Connis, and Thompson (1979) and our earlier papers (Wehman, & Hill, M., 1981; Wehman, Hill, M., Goodall, Cleveland, Brooke, & Pentecost, 1982) do present descriptive analyses of mentally retarded persons who are competitively employed but no statistical or cross tabulation analyses were utilized. In addition, the Sowers et. al. paper was limited to a small number of food service employees. Other published reports have focused more on small episodic efforts (Brickey & Campbell, 1981; Rusch & Menchetti, 1981; Wehman, Hill, J., & Koehler, 1979 a;b) which, while helpful, do not provide the comprehensive data necessary for policy formulation. In order to evaluate the perspective of employment for mentally retarded persons, longitudinal data from a larger study pool is needed.

One source of such data might be state rehabilitation agencies. However, a major limitation of the large state rehabilitation agency annual reports which are available is that no specific placement model has usually been practiced. Some counselors emphasize an on-the-job training approach, others provide group or individual counseling, and others believe in only placing those disabled persons who can significantly help themselves. There is no literature that we are familiar with which focuses directly on one placement model and its record of success over time with a given pool of disabled persons. Another drawback of state rehabilitation reports is that the data have not been collected as carefully as is necessary in a well controlled research endeavor.

This need to more systematically analyze mentally retarded workers in competive employment prompted the undertaking of this investigation by analyzing the demographic characteristics of the mentally retarded persons who have been placed through our program since 1978 and to relate these characteristics to high and low retention rates. Since 1978 we have practiced exclusively a supported work approach to competitive employment (Revell, Wehman, & Arnold, in press; Wehman, Hill, & Koehler, 1979 a,b; Wehman & Kregel, 1985). This approach is characterized by the use of a professional staff person at the job site who initially makes a job placement which is then followed by intensive 1:1 training provided until the individual becomes more independent. At that point, a gradual fading of staff assistance is implemented. Additional related services are provided including transportation training, parent/guardian community living skill training and, in general, intervention is provided for any particular need which threatens continued employment.

To critically evaluate the effectiveness of this intervention, clear measures of program and client success must be defined. This investigation will examine client and family demographic characteristics in relation to a successful vocational outcome defined as retention in employment six months after the date of first placement. This dependent variable is selected based upon comparative data showing that the average length of work histories for entry level food service and janitorial jobs by nonhandicapped persons is less than six months (Annual Job Survey, 1984). Therefore, the development of a six month work history for these participants is viewed as a first-step indicator of success toward continued employment in the community. Specifically, our demographic data were analyzed using statistical techniques in order to identify those characteristics of retarded workers that were associated with the successful outcome of over six months retention in employment. It was hypothesized that a supported work model is equally as effective with persons of varying demographic characteristics and backgounds; therefore, we assumed the null hypothesis would be accepted as a result of this analysis. In that this investigation does not include a control or comparison group, it is not possible to report a cause and effect relationship between the training program and the outcome. However, since most clients had been considered by related service providers as not ready for competitive employment, had never worked before, and since referral sources were instructed to refer only those individuals who could not work without intensive, long-term job site training, confidence was increased that few participants would have reached this state of success without supported work services.

## Method

### The Program

Over the last six years, state and federal grants have supported the direct placement and training of mentally retarded persons in competitive jobs in several predominantly urban locations in Virginia. Through a special job placement program, data reported in this investigation are based upon 155 clients placed in jobs receiving at least minimum wage or better from their respective employers from the first day of placement. All clients have received direct job site training, advocacy, and follow-up services by behaviorally based, individual instruction (Moon, Goodall, Barcus, & Brooke, in preparation).

## Settings

The job settings selected for placement activities have been limited only by availability of jobs and the willingness of employers. Job trainers were free to go to any company within the community as long as minimum wage was available. Over 125 companies have hired clients. These have involved eight different categories of companies. These are food services, janitorial, industrial, non-profit services, commercial businesses, education, health care, and lodging. Company affiliations have included private profit, private non-profit, local government, state government and federal government. Figure 1 shows a graphic representation of the percent of placements made in each company and affiliation type. The highest percentage of placements have been accomplished in food service companies and the great majority have been in private, for-profit companies.

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## Participants

All 155 participants were referred to the program from a community agency, school, counselor, friend or parent. Generally, only clients who had a measured intelligence score below 70 and who exhibited a willingness to work were selected as potential job candidates. Several clients had measured I.Q.'s in the 70's; however, all also exhibited a significant secondary handicap such as speech and/or motor impairment, behavioral problems, etc.

Once accepted as a potential candidate, participants were selected for job placement based upon the availability of an appropriate job into which they could be placed and trained. The job would provide at least minimum hourly wage and be within a managable distance from the client's place of residence. If several candidates were available for one job, the one who most closely matched the skill requirements for the job and possessed capatible behavioral characteristics for the setting was selected for the job based upon the judgement of the job trainer in charge. The demographic characteristics for entire group are given in detail below.

Procedures

The demographic variables available on each participant were collected at the time of placement and, in part, retrieved at a later date. Information was obtained from multiple sources including permanent records, psychological reports, social histories, parental and counselor reports. Raw data were compiled in a survey format, then coded for entry into a computerized data base.

On several variables, job trainers were required to rate the participant according to a four point scale to assess skill development in specific areas. These were reading, math, and time awareness skills as well as speech and language expressiveness. If any doubt occurred in the rating, the job trainer was asked to obtain agreement of one other job trainer or other individual familiar with the client.

Reliability

For 22 participants or 14% of the cases, all data were collected twice using a second job trainer as the primary data collector in a double-blind manner or in re-collecting data on an individual from the same job trainer under the pretense that some of the surveys had been misplaced. A reliability coefficient was established by using the formula below:

$$\frac{\text{Agreements}}{\text{\# of Agreements} + \text{\# of Disagreements}} \times 100$$

Interrater reliability estimates ranged from .69 to 1.00 with a mean of .82.

Dependent Measures

Retention in employment for a total of at least six months was selected as the dependent measure. This means that participants reaching this successful outcome could have worked only six months and one day or, for other early clients, the length of the entire program, i.e., six years. This also means that in some cases, clients reaching this level may have had more than one job. In approximately 15 percent of the cases, clients may have lost a job before six months but were replaced in other, more suitable jobs. The initial loss may have been due to a poor job to client match, skill or behavior deficits, or some other unforeseen problem such as a lay-off. However, since a supported work program is, indeed, a long term follow-along program, the model may in some cases replace clients in jobs. With a supported work approach, it is more appropriate to examine total job histories rather than the success in a single, entry level job since follow-along services, and sometimes replacement services are integral components of the model. This dependent measure is based upon time in employment only and not reasons for leaving employment. Therefore, participants not reaching this successful outcome may have been terminated for skill or social deficits, legitimately laid-off due to economic conditions, moved away or many other reasons.

## Results

Demographic variables were compiled and cross tabulated to create a profile of the supported work model's service population. Tables 1, 2, 3, & 4 exhibit demographic characteristics on 155 clients served over the six year study period and cross tabulations are provided which show the percent of persons not reaching the six month retention outcome compared to the percent of persons successfully reaching the six month retention outcome in competitive employment on each demographic variable. Table 1 shows the personal characteristics of the individuals in question; Table 2 shows specific information on academic skill development by these individuals. Table 3 shows relevant information regarding their histories of previous habilitative services and Table 4 provides the family support characteristics of these persons.

## Statistical Analyses

Cross tabulations on the retention rates above and below six months for the total population of 155 clients show that approximately two-thirds (65%) of the client population in our pool have been retained in employment for at least a six month period. (The mean months employed for this same group is 20 months). Utilizing chi-square analyses, few statistically significant differences in the characteristics were found between the groups of persons retained in employment over six months versus those not retained. Close examination of the total group demographics as well as the varying percentages of the low (under 6 month) retention rate group versus the high (over 6 month) retention group on each demographic variable does, however, create a clear profile of the client population and offer some unexpected findings regarding the characteristics of these two groups. Although actual statistical significance was not achieved in most cases, significant differences were found between groups in four areas. These are: (1) sex differences approached significance (higher retention rates for males); (2) reading skill development differences (higher rates for persons with more limited reading skills); (3) differences in types of previous adult programs (higher rates for persons from transitional programs) and (4) differences in guardian identities (higher rate for those who did not have a natural parent listed as a primary guardian). These will be described further in the sequence in which they appear in Tables 1, 2, 3, and 4.

## Personal Characteristics

Sex differences. Table 1 shows that the majority of clients placed were

Insert Table 1 about here

males (66%) compared to a female representation of 35 %. Utilizing chi square analysis, the differences in terms of retention rates of males versus females approached a statistically significant level (P=.079). While 70% of males reach the successful retention rate of 6-months, only 55% of the female clients do so.

Age. Also in Table 1, the mean age of the client population is given at 30 years old with a range from 18 to 66 years. No significant age differences were found regarding the two retention levels although it is noted that those retained over 6 months are slightly older.

Developmental Level (I.Q.). Developmental or measured intelligence (I.Q.) scores derived from permanent records show that the program has placed a diverse group of individuals with functioning levels ranging from severe mental retardation to borderline categories. The majority of participants fell in the moderately mentally retarded (51%) range, with a 5% representation of persons in the severe range, 34% in the mild range, and 10% in the borderline mental retardation category. Scores have ranged from a low of 25 to a high score of 78. Six years ago, a determination of the program designers stipulated that any client who was accepted with diagnosis in the mild or borderline range of mental retardation must also exhibit at least one other secondary disability otherwise it was believed they did not require the extensive support services of the program. The mean I.Q. of the group was 50 and median 49.

No significant differences are found between the four developmental levels regarding capacity to be retained in competitive employment over six months; however, it can be seen that there is a slightly higher representation of mildly mentally retarded persons in the below six month retention group. Persons who are moderately and severely mentally retarded and of the borderline mental retardation range appear to have better retention records. The mean I.Q. for the low retention group was 50.5 and the mean I.Q. for the high retention was 50.

Dual Diagnosis. Table 1 also shows various other categorical or behavior labels applied to these participants. Twenty-four percent were labeled behavior disordered, had documented problems with alcohol or exhibited documented behavioral problems which required specific intervention in their new jobs. Only 5% were labeled as schizophrenic. Both of these groups are considered groups with dual diagnosis based upon the documented secondary label with the diagnosis of mental retardation. The group labeled as behavior disordered (i.e., behavior or alcohol problems) showed no significant difference from the general population on retention rate and in fact, Table 1, shows less than one-fourth leaving employment permanently in the first 6 months as compared to the exit of one-third from the general population without a dual diagnosis.

The statistics for the small group diagnosed as mentally retarded and schizophrenic (n=6) are very different, however. This group tends to exit from employment before 6 months significantly more often than does the general population or the behavior disordered group ($P < .05$).

Speech and Language Impairments. A large percentage (38%) of the participants exhibit impaired speech and language skills ranging from verbal speech which is difficult to understand (31%) (i.e., the client must repeat verbal behavior frequently to be understood) to 7% exhibiting little or no speech and language whatsoever. Sixty-two percent of group exhibited clear verbal speech. Although no statistically significant differences between groups were found, the group with impaired verbal speech showed slightly higher retention rates in competitive employment over 6 months. The second most successful group in this triad is the non-verbal group with 70% of these participants remaining in employment over 6 months. Unexpectedly, the clear speech group showed the lowest retention rate (63%) of the three groups but, of course, still approximates the norms for retention by the service population as a whole.

Other Secondary Handicaps. Not exhibited in Table 1 are data representing persons with other concomittant handicaps because again no significant differences were found for those individuals who exhibited additional physical or sensory handicaps. The percentages of those clients with other handicaps in addition to mental retardation are as follows: 10% with cerebral palsy, 12% with impaired abmulation (only one individual confined to a wheelchair was placed), 5% with hearing impairment, 10% with visual impairments, and nearly 10% with impaired arm/hand (one or both) use. The retention rates of these individuals is either identical or sometimes slightly higher than general mental retardation population with no secondary impairments.

Academic Skill Development. Table 2 shows the academic skill development for all clients and the cross tabulations of those who were not retained in competitive employment versus those who were retained at least six months by each academic skill variable. Table 2 shows that half of this service population had little or no math other than, perhaps, simple counting skills, one third had no reading skills other than simple symbols such as for the designation for rest rooms, nearly half who were either unaware of time or had only minimal awareness, i.e., they had to be taught to stop for breaks from visual cues in the environment. Few clients exhibited multiplication skills, 36% exhibited simple reading

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at the second or third grade level, and 53% could use the hour and minute hand on a clock or watch. Individuals noted as having little or no arithmetic skills showed slightly higher retention rates in work (71%) than persons with more complex math skills (61%). This was also found to be true to a statistically significant level ($p < .04$) for persons with very limited reading skills (79%) compared to persons with more complex reading skills (61%). That is, significantly more persons who do not read were retained in employment over six months compared to persons with more complex reading skills.

A similar trend, though not to a significant level, can be seen in the time awareness area. Here, the group rated as having only "minimal" time awareness reached the over 6 months retention rate seemingly more often (i.e., 86% of the cases) than the other two groups made up of persons with little time awareness (63%) to complex time telling skills (62%).

Previous Habilitation Histories. Table 3 shows the histories of previously received social services for all clients and the comparison of the low retention group to the high retention group on each social service variable. Three services are addressed in Table 3. First, the histories of previous financial aid. Second, the histories of adult activities center and/or sheltered workshop enrollment. Third, the earnings from the year previous to placement are examined.

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Insert Table 3 about here

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Financial Aid. Table 3 shows the large majority of these individuals did receive regular financial aid prior to placement (86%) either in the form of SSI or SSDI. No differences in retention rates are apparent between persons who previously received financial aid and those who did not.

Previous Work Program Enrollment. One in five had attended an adult day program, often called an activities center or developmental center, where they received no pay for activities completed. The mean time enrolled in such a program was almost two years. Fifty-seven percent had attended a sheltered workshop at one time in their lives and the average time enrolled was almost three and one-half years for that group.

Table 3 also shows that two clearly different types of day activities centers and sheltered workshops were identified. Type 1 included regular training and transitional exposure in the community such as in enclaves; while type II included only in-house training where clients rarely left a designated, segregated setting during the day. The statistics on workshops and centers are combined on these program characteristics since many included similiar curricula. Of our clients who attended such programs, 56% attended workshops and activities centers emphasizing community training. In contrast, 44% attended programs which were segregated, and provided in-house only training. Individuals who were once served in the type 1, transitional programs, were more likely to be retained in competitive employment over 6 months (72%) compared to the representation of only 49% high retention of those persons who had attended segregated, in-house only training programs in the over six month retention category. This, too, was found to be a statistically significant difference ($p < .05$).

Earnings Year Previous to Placement. Data on annual income earned in the year previous to our placement efforts showed that only 18% earned over $200. that year and the mean annual salary for that group was $551. The remaining 82% had earned less than $200. the year before placement. Of the small group of individuals who did earn over $200, however, somewhat higher retention rates over six months in competitive employment are found. This factor approaches significant levels ($p = .07$).

Other social services received but not represented in Table 3 due to lack of significant differences between groups are previous histories of state vocational rehabilitation services, institutionalization, and public school backgrounds. Regarding previous vocational rehabilitation services, about half of the population had received some sort of services from this agency ranging from evaluation only, to previous but failed job placements. Of that 50%, all of these had been designated as "severely disabled" by the State Vocational Rehabilitation Department, and almost 50% of these had a "28" case status meaning case-closed due to lack of previous placement success. Persons who were at one time serviced by vocational rehabilitation had about the same over six month retention record (68%) as those who had no history of rehabilitation services (61%).

One-fourth of our total group had been institutionalized at some point in their lives and the mean length of institutionalization for that group was 10.7 years. No difference in retention success was found on this variable.

The vast majority attended a public school program with a mean years enrolled of 9.3. Many (46%) attended segregated special centers although 43% attended school in regular education buildings. Almost all (94%) were schooled in self-contained classrooms. Sixty-four percent received no vocational training at the secondary level. Only 16% received work experience in the community during their secondary school years. Again, no major differences were seen in retention success regarding any of these public school background variables.

## Family Support Characteristics

Table 4 shows three types of information indicating degrees of family support for all clients and compares the group leaving employment before six months to those succeeding beyond six months or more. The variables are: 1) residential situation, 2) identify of the primary guardian, and 3) degree of other (sibling)

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family interactions.

Residential Situation. Regarding the clients residential situations, the great majority (72%) did live with their families at the time of placement; 10 percent in group homes. No significant differences were found on this variable although a slightly higher percentage of group home/boarding house clients met the over six month criterion.

Identity of Guardian. The primary guardian for most clients (67%) was the natural parent. Other participants had a legal guardian (12%) or did not have an official guardian (21%) other than a service provider such as a group home counselor. Significant differences were found between the natural parent group and the remaining 33% of the clients who did not have a natural parent as a guardian. The group with a natural parent as a guardian show lower rates of achieving six months of competitive employment compared to the non-parent guardian group ($p < .03$).

Family Interactions. Finally, in the majority of the cases (63%) we found our clients had frequent interactions with siblings. No difference can be seen regarding retention rates on this family support variable.

Not exhibited in Table 4 are occupations and educational backgrounds of parent or chief wage earner in the client home. All occupations and levels of educational background were represented but appeared to have no impact on client retention rates except that sons or daughters of unemployed persons were slightly more likely to be retained (72%) over six months.

## Discussion

The general demographics given create a profile of a six year service population of individuals who are mentally retarded and who were placed into competitive employment via the supported work model. The largest representation of a single disability group was that of the moderately mentally retarded followed by mildly mentally retarded. In addition to retardation, approximately 40% had impaired speech, one in 10 had a sensory impairment, and one in five had been labeled behavior disordered. These are the groups who traditionally have been relegated to sheltered employment or no employment throughout their lives in that they generally do not obtain and maintain a job independently.

The demographics also show that the population is made up of individuals from diverse backgrounds and not simply from the upper-middle class, supportive home with college educated parents. Rather, many had been institutionalized for long periods of time, one half came from families whose chief wage earner was either unemployed or in a blue collar position and one-third of the clients did not even reside within the family unit.

Interestingly, lack of academic skill development has not precluded job placement or retention in that these demographic data show that the great majority have very limited math and reading skills and almost half cannot tell time.

Finally, although the general demographics show that the population received every type of habilitation services commonly available at the community level, only 18% of these adults had earned over $200. as an annual salary the year prior to our intervention. A great majority (86%) were receiving financial aid from the government but not the appropriate services which could enable them to transition into the mainstream of competitive employment.

Several groups are underrepresented in the demographics of this total service population. One of these is the group of women served. Presumably the underrepresentation of females is largely due to an entry level job market already flooded with unskilled but nonhandicapped females in need of work. In contrast, males often make up the "skilled" labor force. Therefore, it appears that there is a scarcity of unskilled males at entry level needed for what is described as "heavier" work. The men in our program have apparently been filling this gap.

Every effort must be made to reduce this inequitable provision of services to women who are handicapped. Perhaps, additional advocacy is needed at the job-find stage to identify more jobs for females and to enable appropriate women to enter jobs traditionally thought of as too physically rigorous for the "weaker sex".

Other obviously underrepresented groups in these demographics are persons who are severely mentally retarded or have physical handicaps as well as mental retardation. This underrepresentation is certainly due to the lack of what we have considered appropriate jobs for these individuals available in the competitive job market. Although, theoretically, the program holds that severely and multiply handicapped persons can become competitively employed, even more special accomodations or adaptations than we have used previously may be needed on most job sites as well as the affirmative action and interest of employers and coworkers. These presumptions should not, however, preclude placement with these individuals especially at the demonstration level such as the case with our program. Multiple experimental demonstrations are needed with individuals who are severely mentally retarded and physically disabled.

Analyses showing significant differences between groups who leave competitive employment before six months and those who are retained over six months yield interesting and unexpected findings. First, it was found that significantly fewer females are retained in competitive employment over six months when compared to the males. As stated above, this is apparently a cultural phenomena related to an inherently sexist job market. Just as nonhandicapped females represent a highly underemployed, underpaid work force, women who are retarded may be a far less valued component of the work force than their male counterparts. Not only is it harder to place mentally retarded females, but it is also harder to help them maintain employment. Future research must examine the specific reasons for job separation for females.

Individuals labeled as schizophrenic also were separated from their competitive employment significantly more than the general behavior disordered group and the general population. Although this was a small group, the figures are striking. The explanation for such a high failure rate with this group is probably due to the lack of training and experience of staff to deal with problems unique to this group. By and large the staff is made up of individuals with training in special education and applied behavior analyses and not in specialized mental health training. The serious and unique problems of this disability interacting with work requirements may also be responsible for this lack of success.

Persons with more refined reading skills left competitive employment with the supported work model before six months, significantly more than persons with more limited reading skills. This trend was seen, though not to a significant level, in other academic skills as well, such as arithmetic and time awareness. These unexpected findings may be an artifact of the supported work model, itself. That is, this model was designed and developed to serve individuals who are significantly handicapped. Therefore, our approach toward entry level job-find may, in fact, underemploy some participants with more complex academic skills. Another explanation may be that these individuals appear, on the surface, to require less intensive training; therefore, the job trainer may fade from the job site too quickly, setting up a situation where the participant is more likely to fail. Further, research must be accomplished in the near future to examine the intensity of training for persons displaying varying levels of reading skills and the specific reasons for job separation of this group.

Of individuals who were previously served in sheltered workshops or adult activities centers, if they attended an in-house only training program which segregated them from regular training in natural community work environments, they were significantly more likely to leave competitive employment in less than 6 months. Thus, these data show that those who attended programs which provide transitional community-oriented training such as work crews and enclaves, have a significantly better chance of being retained in competitive employment beyond six months than their counter-parts from segregated settings. Although this fact may not be at all surprising to programmers in the field, it is, perhaps, the first clear documentation of the superiority of community-oriented training programs to enhance transition to the competitive work world.

Finally and most unexpectedly we find that persons whose identified guardian is not a natural parent (i.e., persons with a legal guardian or service provider relationship only) tend to be retained in competitive employment over six months significantly more than those who do possess a natural parent as a guardian. This is a particularly remarkable result in view of the criticism often leveled at the supported work model regarding the need for the supportive, involved parent. This finding shows that, in fact, parents retaining active status as a guardian with adults may impede maintenance in competitive employment. Again, far more research is needed to understand why this result was found. However, at an anecdotal level, job placement specialists often find parents of mentally retarded persons frequently have low expectations for the success of their son/daughter in any work setting. They often state that they have been told all of their childrens' lives not to expect competitive employment for their children. Further, incentives do not exist for the parent to ensure that their child succeeds. Parents know that financial aid and day program support is usually available for unemployed, disabled persons. Therefore, employment may be viewed as unpredictable, unfamiliar, and risky at best. The parental dilemma is understandable and legitimate. Loosening the restrictions for loss of financial aid, decreasing the monetary disencentives, and providing for rapid reevaluation to return to the roles of the aid after a job failure, may be the strongest tools in changing parental attitudes in this country.

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## Table 1

### CHARACTERISTICS OF CLIENT POPULATION
(Demographics and Cross Tabulations
on Retention Rates Above and Below Six Months)

| Characteristics | | Total Group Demographics | Retention < 6 Months | Retention > 6 Months |
|---|---|---|---|---|
| Total Number | | 155 | 35% | 65% |
| SEX | Male | 66% | 30% | 70%[1] |
| | Female | 34% | 45% | 56%[1] |
| AGE | Mean | 30 Years | 29 | 32 |
| | Range | 18-66 Years | | |
| DEVELOPMENTAL LEVEL | | | | |
| | Severe | 5% | 20% | 80% |
| | Moderate | 51% | 34% | 66% |
| | Mild | 34% | 43% | 57% |
| | Borderline | 10% | 19% | 81% |
| | Median | 49 | | |
| | Mean | 50 | I.Q.= 50.5 | I.Q.= 50 |
| | Range | 25-78[2] | | |
| BEHAVIORAL LABELS | | | | |
| Alcoholism/ Behavior Disorder | | 24% | 21% | 80% |
| Schizophrenic | | 5% | 67% | 30%* |
| No Labels | | 71% | 36% | 64% |
| SPEECH & LANGUAGE IMPAIRMENTS | | | | |
| Clear Verbal Speech | | 63% | 37% | 63% |
| Unclear Verbal Speech | | 30% | 28% | 72% |
| Largely Vocalizations Only | | 7% | 30% | 70% |

* $p < .05$

[1] p .07

[2] persons with I.Q.'s measured in 70's were multiply handicapped

## Table 2

## ACADEMIC SKILL DEVELOPMENT OF ALL CLIENTS AND CROSS TABULATIONS ON RETENTION RATES BELOW AND ABOVE SIX MONTHS

| ACADEMIC SKILLS DEVELOPMENT | Total Group Demographics | Retention < 6 Months | Retention > 6 Months |
|---|---|---|---|
| Arithmetic<br>None to Simple Counting | 50% | 29% | 71% |
| Add/Subtract(plus) | 50% | 39% | 61% |
| Reading<br>None to Symbol Recognition | 29% | 21% | 79%* |
| Sight Words to Simple Reading | 71% | 39% | 61%* |
| Time Awareness<br>None | 11% | 37% | 63% |
| Minor | 15% | 14% | 86% |
| Use Hour and Minute Hand | 74% | 38% | 62% |

* $p < .05$

Table 3

## HISTORIES OF PREVIOUS SOCIAL SERVICES/HABILITATION EFFORTS FOR ALL CLIENTS AND CROSS TABULATION FOR RETENTION BELOW AND ABOVE SIX MONTHS

| Demographic Information | Total Group Demographics | Retention < 6 Months | Retention > 6 Months |
|---|---|---|---|
| PREVIOUS SOCIAL SERVICES | | | |
| Financial Aid Prior to Placement | 86% | 35% | 65% |
| No Aid | 14% | 37% | 63% |
| Adult Activities Center Prior to Placement | 21% | 31% | 69% |
| A. Mean Months Enrolled | 22 Months | 24 Months | 21 Months |
| No Activities Center | 79% | 35% | 65% |
| Sheltered Workshop Prior to Placement | 57% | 38% | 62% |
| A. Mean Months Enrolled | 42 Months | 49 Months | 38 Months |
| No Sheltered Workshop | 43% | 30% | 70% |
| Type 1 - *Received Community-Based Training While In Activities or Workshop Program | 56% | 28% | 72%* |
| Type 2 - Segregated/In-House Only Training in Center or Workshop | 44% | 51% | 49%* |
| PREVIOUS EARNINGS | | | |
| Earned More Than $200 Year Prior To Placement | 19% | 18% | 81%** |
| Earned Less Than $200 Year Prior | 81% | 39% | 61%** |

* $p < .05$
** $p = .07$

Table 4

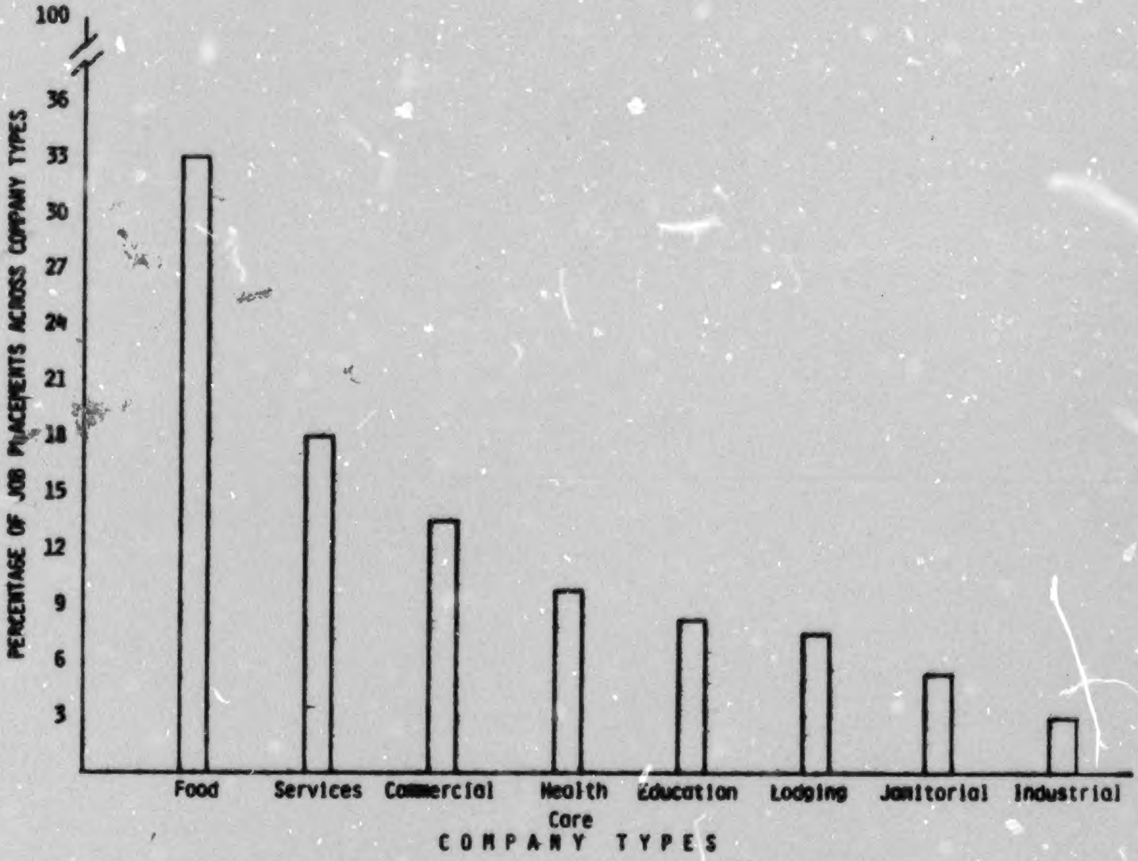
## FAMILY SUPPORT CHARACTERISTICS FOR ALL CLIENTS WITH CROSS TABULATIONS ON EACH VARIABLE FOR LOW AND HIGH RETENTION GROUPS

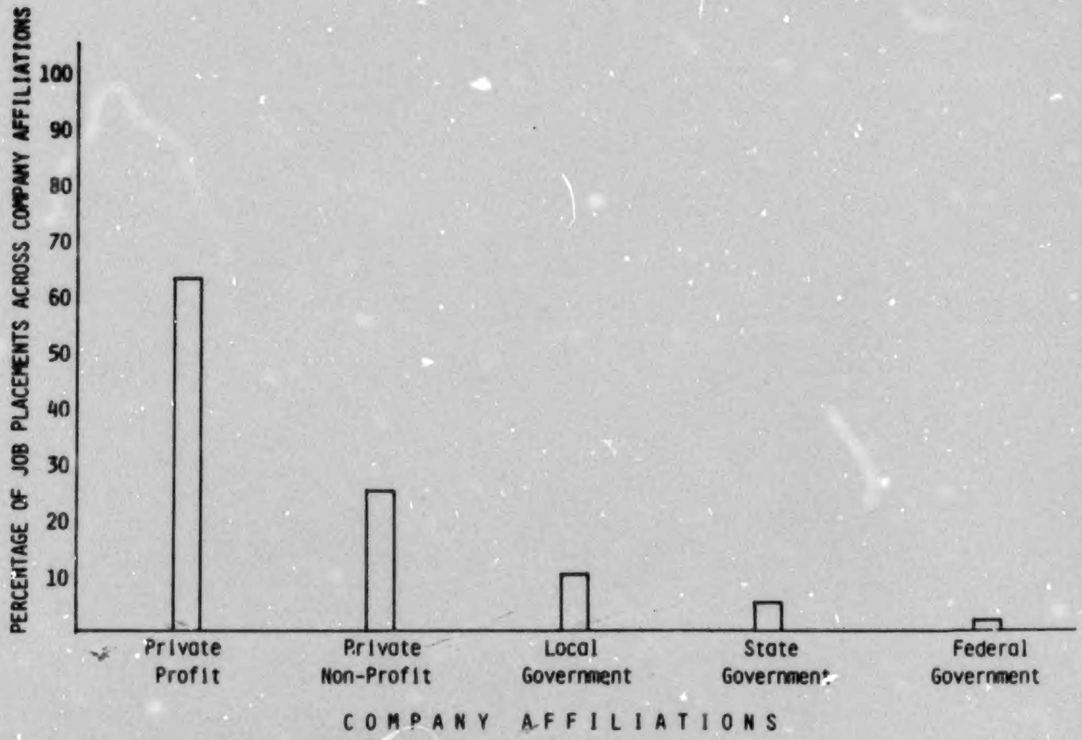
| Demographic Information | Total Group Demographics | Retention < 6 Months | Retention > 6 Months |
|---|---|---|---|
| RESIDENTIAL SITUATION | | | |
| With Parents/ Family at Placement | 71% | 37% | 63% |
| Group Home or Boarding House | 16% | 26% | 74% |
| Supervised Apartment | 6% | 33% | 67% |
| Independent Living | 7% | 39% | 61% |
| IDENTITY OF PRIMARY GUARDIAN | | | |
| Natural Parent | 66% | 42% | 58%* |
| Legal Guardian/ Service Provider/ Other | 34% | 24% | 76%* |
| OTHER FAMILY SUPPORT | | | |
| Interacts With Siblings | 61% | 33% | 67% |
| No Interaction With Siblings | 39% | 39% | 61% |

* $p < .05$

Figure Caption

Figure 1 - Percent of job placements across company types and company affiliations from six year service period (1979-1984).


PERCENTAGE OF JOB PLACEMENTS ACROSS COMPANY TYPES
100
36
33
30
27
24
21
18
15
12
9
6
3
Food
Services
Commercial
Health Care
Education
Lodging
Janitorial
Industrial
COMPANY TYPES


PERCENTAGE OF JOB PLACEMENTS ACROSS COMPANY AFFILIATIONS
100
90
80
70
60
50
40
30
20
10
Private Profit
Private Non-Profit
Local Government
State Government
Federal Government
COMPANY AFFILIATIONS

# DIFFERENTIAL REASONS FOR JOB SEPARATION OF PREVIOUSLY EMPLOYED MENTALLY RETARDED PERSONS ACROSS MEASURED INTELLIGENCE LEVELS

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# Abstract

Reasons for job separations of mentally retarded persons placed in competitive employment situations were analyzed from a six year study period. Of the 107 separations which occurred, 50% were caused by client-related reasons such as attitude problems and skill or behavioral deficits. The other half were caused by environmental forces outside the control of the client and often beyond the control of the job trainer supplying supported work services. Highly significant differences were found in the mean I.Q. scores for the client-caused separation group (Mean I.Q. 55) versus the environmentally-caused separation group (Mean I.Q. 48) when subjected to analysis of variance. Implications of these findings for appropriate program efforts with mildly and moderately handicapped individuals are discussed.

# Differential Reasons for Job Separation of Previously Employed Mentally Retarded Persons Across Measured Intelligence Levels

The reasons for the success or failure of mentally retarded workers in their jobs are of substantial interest to those professionals who are engaged in the development of employment programs (Kochany & Keller, 1981). Persons with mental retardation and their families are also concerned that many variables remain unresolved regarding the outcomes of job placement (Hill, J., Seyfarth, Orelove, Wehman, & Banks, 1985). Further, the rehabilitation community in general is currently exhibiting increased interest in the competitive employment potential of persons who are mentally retarded (Bellamy et al., 1984; Wehman & Kregel, 1984). Many investigators are concerning themselves with outcomes of job placement such as retention time (Fulton, 1972) and the varied causes of eventual job loss (Greenspan & Shoultz, 1981).

As the push for competitive employment programs has expanded in recent years, assessing only the number of successful and unsuccessful job placements is not enough for agencies to do in evaluating the effectiveness of their intervention. It is increasingly clear that detailed records which reflect the reasons why handicapped persons were separated from employment is necessary. This type of information may help prevent future job separations of this population which is relatively new to the competitive work force (Brolin, 1982; Cohen, 1962).

We have identified four basic categories of job separation. These are: 1) resignations, 2) terminations (firings), 3) lay-offs, and 4) official leaves of absence. More importantly, the cause of any job separation may be traced either to internal actions (behaviors/deficits) exhibited by the client or to external environmental forces (economic recession, parental interference) which are not usually under the client's control. Therefore, professionals involved in job placement activity must determine whether client skill deficits, inappropriate behavior, or poor client work behavior brought about the job separation or whether external actions on the part of the agents in the environment were responsible for the separation. Specific identification and analysis of the reasons for job separation will greatly enhance program evaluation and help facilitate the replacement of the client. Obviously, in the client-related separations the need for more work in direct job site training on work skills and improving client work attitudes and social behavior will be necessary. On the other hand, externally influenced separations may underscore the need for comprehensive case management services which involve intervention outside of the job setting as well as on-the-job. These services might include parent communication, stronger job site advocacy with employers and coworkers, working with social security representatives, etc. Thus, assessing the nature of a job separation is important because it will have direct relevance to the type of job selected, the training activities necessary, and the degree of staff commitment which will be required for effective intervention.

One such study which evaluated separations of mentally retarded workers from their jobs is reported by Greenspan and Shoultz (1981). In this analysis, 30 mentally retarded individuals placed into jobs in the community were studied. A follow-up investigation interviewed employers to see why these individuals were fired. Terminations were classified into social and nonsocial reasons. Seventeen of the 30 individuals lost their jobs because of socially inappropriate behavior. The average measured intelligence of this sample was 61 and most positions were entry level service occupations. In another follow-up study (Brickey, Campbell, & Browning, in press), employers were queried as to the reasons for terminations of competitively employed retarded persons who previously had held sheltered workshop jobs. The job separation reasons stated were largely limited to behavior on the part of the client. The following reasons were given: hypochondria, job too strenuous, insubordination, poor attendance, and refused to accept supervisor's instructions.

In a similar vein, Kochany and Keller (1981) did a case-by-case analysis of mentally retarded persons who failed, dividing lack of retention into the following categories: lack of agency support, parental influence, supervisor vacillation, inappropriate social behavior and poor attendance. Internal client-related problems such as inappropriate social behavior and poor attendance were a leading cause, but external factors such as supervisor vacillation and parental influence were also significant contributors to separation.

The principle value of the Kochany and Keller chapter was that it was a specific case-by-case analysis where data were gathered through on-going assessment by a job trainer responsible for the retarded employee's performance and not from less reliable follow-up records. These data were a part of a project then called "Project Employability" (Wehman, Hill, & Koehler, 1979,a;b), and now part of the Virginia Commonwealth University Rehabilitation Research and Training Center.

It is the purpose of this paper to substantially expand the Kochany and Keller chapter (1981) by reporting the reasons for separation from jobs of a much larger data bank of 107 separations. We will examine differential reasons for job separation of individuals by varying levels of intellectual functioning. Implications of these data for other employment programs will also be considered and evaluated.

## Method

### Participants and Settings

Job separation data which have evolved from over 230 competitive employment job placements made in Virginia through a special project were analyzed for this investigation. These placements were made between 1978 and 1984. The individuals placed in these jobs were 165 adults who are mentally retarded. Approximately 25% of the population has been placed in more than one job. The range of measured intelligence was 25 to 78 with a mean of 51 and a median of 50. Approximately 70% of participants have attended either a sheltered workshp or adult activity center and 86% were receiving financial aid from the government at the time of placement. This population was comprised of 65% males and 35% females with a mean age of 29 years old. All individuals received placement, one-to-one on-site job training, and follow-along services consistent with a supported work approach to competitive employment (Wehman, 1981; Wehman & Kregel, 1984). All participants have been placed into jobs in natural community job settings and were hired at a salary of at least minimum wage or better on the company's own payroll. Over 125 companies of various types have been involved. Company types were as follows: 33% food service, 7% janitorial, 3% industrial, 18% services, 14% commercial businesses, 8% educational facilities, 10% health care, and 7% lodging facilities.

Instrument and Procedures

Longitudinal data of the job placement study period (1978 to 1984) showed that 107 separations had taken place from which clear reasons for the job loss could be identified within client records or by job trainers. An examination of these data brought about agreement that there were approximately 21 commonly occurring reasons for job separations from an extensive perusal of the client files as well as job trainer delineations. These 21 specific reasons were then collapsed into seven distinct categories related to the primary cause of job separation. These were: 1) client skill deficits, 2) client attitudinal problems, 3) client interfering behavior, 4) external economic lay-offs, 5) external parental interference, 6) negative social-contextual reactions, and 7) an "other" category of external causes. It is important to note that the first three of these categories are related to behaviors, deficits, or actions internal to the client, while the remaining four categories are clearly related to external environmental variables acting upon the client and resulting in job separation. The seven categories with the accompanying specific reasons for separation are given in Table 1.

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Insert Table 1 about here
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Each of the seven categories and 21 specific reasons for job separation were defined and listed in a survey format. Fourteen staff and job trainers then analyzed the specific job separation reason from the client's file and placed it into only one of the 21 possible choices. The job trainer who had actually worked with the client at the time of job separation provided this information in most cases. In those cases where the original job trainer was no longer available, a job trainer who was on-staff at the time of the separation provided the information based upon personal knowledge and the client's file. The time involved in organizing the data for this analysis was four months. When more than one job coordinator worked with a client, the second job coordinator was asked to participate in the decision-making process as to the reason for the superation. If uncertainty existed about the true reason for separation of a client, the job trainer was asked to obtain agreement with one other trainer before assigning the separation to a category. Obviously, in some cases there was one major reason for job separation; in many other cases, however, there were multiple reasons. In these cases the primary or most evident reason was recorded.

Reliability

For 20 separations, or in approximately 18.6% of the cases, the reasons for separation were collected twice using a second related job trainer to provide the primary reason for separation in a double blind manner or data were re-gathered using the same trainer under the pretense that some data had been misplaced. A reliability coefficient was established by the formula below:

$$\frac{\text{Agreements}}{\text{\# of Agreements + \# of Disagreements}} \times 100 = \text{\% Agreements}$$

Reliability coefficient of .86 was established for these 20 cases.

## Results

Table 1 provides a frequency count and a percentage of each specific type of separation divided into seven distinct categories and the 21 more specific reasons under the categories. The mean measured intelligence (I.Q.) for the group of individuals separated from their jobs for each of the reasons is also given.

Within this table it can be seen that the greatest number of separations (26%) was attributable to client attitudinal problems expressed by a lack of desire to work, a lack of effort, poor attendance, and a small number who were involved in theft. This group also had the highest mean I.Q. (59.7%).

The second major cause of separations (17.7%) came from an external force described as negative social-contextual reactions to the client. This category was comprised of separations which occurred due to negative employer/coworker attitudes even though the client was working according to employer standards. Also within this category are four clients who were laid-off at the end of the season as were all employees but the supervisors stated that these clients were not welcome back when work resumed in the fall. No specific reason other than "he/she just doesn't fit in" were given and it appeared that this seasonal lay-off was a convenient time to separate the employee. Two clients were terminated for inappropriate appearance *for the setting*. In both cases it was not an appearance problem which could be remediated but rather that these individuals looked "retarded".

The third major cause of separation (14%) was client work skill deficits and the fourth cause (13%) was legitimate economic lay-offs due to downturns in the business cycle. The fifth most common reason (10%) was client interfering behavior such as aberrant displays of perseveration, self-injury, etc. or insubordination/agression toward employer or coworkers.

Ten percent of the separations were caused by a variety of "other" external forces outside the control of the client, the employer, and the job trainer. These involved transportation problems, changes in residential situation, medical leaves, and in one case, financial aid interference (that is, it was not advisable for the client to lose Medicaid because of extreme health problems). Five clients who were re-placed by the program in "better" jobs (usually with more weekly hours) are also included in this category.

Finally, the least frequent cause of separation (8.4%) was that of parental interference in which a parent actually demanded that the son/daughter leave the job. The program experienced many more threats from parents, but this figure represents the percent who carried out such threats.

Exactly half of these separations were attributable to internal client-actions and half to external environmental actions. Utilizing analysis of variance the group mean I.Q. for internal client-related separations was found to be statistically different from the group mean I.Q. of the persons separated by external reasons to the .0001 level of confidence. Specifically, it was found that individuals with higher I.Q.'s (in the mid-50's in this case) were separated from their jobs based upon behaviors, deficits, and actions which could be traced to the client. Persons with lower I.Q.'s (in the mid 40's in this analysis) were separated from their jobs by external, environmental forces originally defined as outside the control of the client, and, sometimes, outside the control of the job placement specialist.

## Discussion

The statistically significant differences in the measured I.Q. scores of the groups separated due to internal client actions versus environmental reasons is an important finding. These results provide actual quantitative data to show an association of measured intelligence with nature of job separation. These data show that, in our population, if a more mildly mentally retarded person with an average measured I.Q. in the mid-50's is separated from a job, he/she tends to be the "actor" who frequently causes his or her own job separation due to skill or behavioral deficits. In contrast, if a more significantly mentally retarded person is separated from a job, it is generally because the environment acts upon this individual. One explanation of this finding may be that less intellectually capable persons are more subject to external forces in the environment and less likely to act on their own to bring about job separation because of the nature of their disability. However, although they are less apt to exhibit a specific behavior which may lead to job separation, they do appear to be the "first to go" when lay-offs occur. In addition, nonhandicapped supervisors and coworkers appear to remain more uncomfortable with them than with the mildly handicapped workers served in our program. Parents also seem to have far more control over the work activities of persons who are more significantly handicapped.

Mildly mentally retarded individuals experience significantly more separations due to behaviors expressing poor work attitudes (e.g., "not trying", poor attendance, "not wanting to work", etc.). Several possible explanations for this emerges from our experience in job placement. In many cases, extremely low expectations have been held for these individuals throughout their school years and into their adulthood. Usually, these individuals have attended watered-down, academically-oriented school and other vocational training programs, originally designed for nonhandicapped persons. In actuality, they may have received less systematic training and work experience in the community than moderately to severely mentally retarded persons. If mildly mentally retarded persons work at all, even occasionally, society often seems satisfied. These low expectations coupled with poor or lax training programs certainly contribute to the poor work attitudes of some of these clients. In some cases, clients separated from jobs in this category have actually wanted to return to the workshop because they miss the bowling league or other recreation-like activities.

Finally, in a limited number of cases we have found that individuals who are more intellectually capable may be more sharply aware of the gross financial disincentives for the disabled in this country. That is, these clients may be more cognizant of the fact that they will receive a disability check whether they work or not. One clear fact which emerges from these data is that attitudinal and low motivational problems are difficult problems to overcome even within the supported work model; over one-fourth of this program's separations have occurred due to this reason. Part of the attempt to remediate this problem must be to reach secondary-school and adult training programs and impress upon them the importance of creating a true work environment, providing systematic training and developing appropriate work attitudes.

These data alone show that further research and demonstration is needed in implementing effective behavior acceleration and deceleration programs in natural job sites, as well as the improvement in teaching of generalization and maintenance of skills on-the-job after the trainer is gone.

Finally, these data indicate that comprehensive support services are needed for persons who are moderately to severely mentally retarded. This investigation shows that these individuals were more at the mercy of economic downturns, parental interference, negative employer/coworker attitudes, and many other external factors outside of their control. Much hard work in the form of job site advocacy and more effective support services outside of the job site are strongly indicated for persons functioning at lower developmental levels.

Recent data show that most mentally retarded persons can work for competitive wages for extended periods of time (Hill, Hill, Wehman, Banks, Britt, & Pendleton, 1985). In fact, after six months of employment approximately 65% of individuals in our job placement program are still employed in a competitive job. It is important to note that this investigation represents only the proportion of clients who were separated from jobs over the six year study period.

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## Table 1

### Reasons For Job Separation of Previously Employed Mentally Retarded Persons
N=107

| CAUSES OF SEPARATIONS | N | PERCENT | MEAN I. Q. |
|---|---|---|---|
| I. INTERNAL CLIENT SKILL DEFICITS | | | |
| 1. Low Quality Work | 6 | 5.6% | 52.00 |
| 2. Too Slow in Work | 5 | 4.6% | 56.80 |
| 3. Needed Too Much Supervision | 4 | 3.7% | 55.00 |
| TOTAL CLIENT SKILL DEFICITS | 15 | 14% | 54.6 |
| II. INTERNAL CLIENT ATTITUDINAL/PROBLEMS | | | |
| 1. Chose to Take Non-Medical Leave | 2 | 1.8% | 68.50 |
| 2. Does Not Want to Work | 7 | 6.5% | 61.57 |
| 3. Does Not "Try" | 5 | 4.6% | 58.00 |
| 4. Poor Attendance/Tardiness | 9 | 8.4% | 52.78 |
| 5. Theft | 5 | 4.6% | 58.00 |
| TOTAL CLIENT ATTITUDINAL PROBLEMS | 28 | 26.1% | 59.77 |
| III. CLIENT INTERFERING BEHAVIOR | | | |
| 1. Insubordinate/Aggressive | 5 | 4.6% | 47.60 |
| 2. Aberrant Behavior | 6 | 5.6% | 53.33 |
| TOTAL CLIENT INTERFERING BEHAVIOR | 11 | 10.2% | 50.46 |
| * TOTAL INTERNAL (CLIENT-RELATED) CAUSES | 54 | 50.40% | 54.94* |
| IV. EXTERNAL ECONOMIC LAY-OFFS | | | |
| 1. Legitimate Lay-Off | 10 | 9.3% | 50.20 |
| 2. Seasonal Lay-Off, Can Return | 4 | 3.7% | 45.25 |
| TOTAL EXTERNAL ECONOMIC LAY-OFFS | 14 | 13% | 47.72 |
| V. EXTERNAL PARENTAL INTERFERENCE | | | |
| 1. Resigned Due to Parental Pressure | 9 | 8.4% | 51.00 |
| TOTAL PARENTAL INTERFERENCE | 9 | 8.4% | 51.00 |

Table 1 - Continued:

Reasons For Job Separation of Previously Employed
Mentally Retarded Persons
N=107

| CAUSES OF SEPARATIONS | N | PERCENT | MEAN I. Q. |
|---|---|---|---|
| VI. EXTERNAL SOCIAL-CONTEXTUAL REACTIONS | | | |
| 1. Supervisor/Coworkers "Uncomfortable" With Client | 13 | 12.1% | 49.00 |
| 2. Seasonal Lay-Off, Cannot Return | 4 | 3.7% | 50.50 |
| 3. Appearance Not Appropriate For Setting | 2 | 1.8% | 43.00 |
| TOTAL EXTERNAL SOCIAL-CONTEXTUAL REACTIONS | 19 | 17.7% | 47.5 |
| VII. OTHER EXTERNAL CAUSES | | | |
| 1. Family Moved | 2 | 1.8% | 42.00 |
| 2. Medical Leave | 2 | 1.8% | 42.00 |
| 3. Financial Aid Interference | 1 | .93% | 43.00 |
| 4. Placed in Better Job | 5 | 4.6% | 47.4 |
| 5. Transportation Problems | 1 | .93% | 49.00 |
| TOTAL OTHER EXTERNAL CAUSES | 11 | 10.10% | 44.68 |
| * TOTAL EXTERNAL (ENVIRONMENTAL) CAUSES | 53 | 49.50% | 47.72* |
| * TOTAL INTERNAL (CLIENT-RELATED) CAUSES FROM ABOVE) | 54 | 50.40% | 54.94* |

*p < .0001 f value 16.23

# AN ANALYSIS OF MONETARY AND NONMONETARY OUTCOMES ASSOCIATED WITH COMPETITIVE EMPLOYMENT OF MENTALLY RETARDED PERSONS

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# Abstract

Monetary and nonmonetary outcomes in a systems approach to program evaluation of the supported work model of competitive employment for disabled persons are given. Three replicable levels of program evaluation are presented: At the systems level (benefit cost analysis), at the service delivery level (a Program Efficiency Index), and at the participant level (time employed first year in labor market). Group outcomes on each level of evaluation are given from the longitudinal data of a six year transitional and supported employment program in the State of Virginia.

# An Analysis of Monetary and Nonmonetary Outcomes Associated With Competitive Employment of Mentally Retarded Persons

One weakness of many vocational training programs for persons with disabilities is the inadequate methods used to evaluate the effectiveness and relative costs associated with the supplied intervention (Boschen, 1984). Most service providers are rarely trained in quantitative evaluation techniques to assess benefits versus costs or other outcomes; further there is frequently little time or motivation to engage in this type of analysis. Consequently, program evaluation takes on secondary importance rather than the necessary primary focus for determining effective delivery of vocational services (Schalock & Hill, in press).

Although the need for accountability in human service programs is not a new issue, with the massive budget deficits as well as an expanding number of alternatives in human service programming, the issue of benefit-cost analysis has taken on special significance (Hill & Wehman, 1983; Thornton, 1984). Conley (1974) defines this economic program evaluation as "...the study of the allocation of scare resources among competing uses." Persons with disabilities, taxpayers, and society as a whole want to know what outcomes are associated with the services provided and how much they cost. While it is true that some service providers are beginning to validate their efforts by factoring in benefits versus costs (Cronin & Cuvo, 1979; Schalock & Hill, in press; Hill & Wehman, 1983; Schneider, Rusch, Henderson, and Geske, 1981), this approach remains the exception rather than the rule.

The need for appropriate program evaluation associated with the limited funds available for employment initiatives for the handicapped is particularly critical. Unemployment and/or underemployment is one of the single greatest problems facing persons with disabilities today. Between 50 to 75 percent of disabled persons are unemployed (U. S. Commission on Civil Rights, 1983) and for those 'employed' by sheltered workshops the average annual wage was $417. in 1976 according to the U. S. Department of Labor (1977). As a result of this nationwide problem, there has been a great rise in federal, state, and local initiatives to assist programs in redesigning more appropriate employment services for disabled persons (Elder, 1984; Will, 1984). However, although funds will be available to modernize employment service systems, appropriate outcome-oriented evaluation of proposed systems will be a must to obtain, still, limited funds. In addition, greater competition from private corporations offering alternative employment services is a trend of the future and already a reality in the State of Washington (O'Neill & Associates, 1984). The 1980's will certainly prove to be a period of increased critical evaluation of vocational services to disabled adults.

Although benefit-cost analysis, providing data on reducing program and subsidy costs but maximizing independence of the individual, is necessarily a primary evaluative measure, other forms of evaluation are equally important. In human services, we need to know more than the relative benefits versus the costs to the system providing a service. There are at least two other levels of evaluation needed: 1) outcomes at service delivery level and 2) outcomes at the participant level.

At the service delivery level, program managers need to evaluate the logistical feasibility of service provision and if such services bring about more efficient staff utilization. At the individual participant level, clear evaluative measures of the outcomes of employment on the individual must be delineated. These measures should include qualitative as well as quantitative data.

The purpose of this paper is to describe three measures of outcome-oriented evaluation of employment services to severely disabled persons. Each outcome measures the services delivered from three different levels or perspectives of the service provision system as a whole: 1) the broad systems level; 2) the service delivery level; and 3) the individual participant level.

Evaluating each level of an entire service system model such as this provides a basic minimum for a systems approach to monitoring and evaluating employment services as described by Schalock & Hill (in press). That is, an evaluation plan for a proposed service should provide at least one measure of each level of the service provision system as shown below. The outcome measures for each level described in this paper are also given below.

| | |
|---|---|
| I. Systems Level: | Benefit-Cost Ratio |
| II. Service Delivery Level: | Program Efficiency Index (Percent of time clients are employed divided by total time in labor market). |
| III. Individual Participant Level: | Total employment time first year in job market. |

It should be noted that there are many other specific outcome measures which could be used to evaluate services at each level. The particular outcome measures tracked and presented in this paper were possible with the longitudinal tracking capabilities of the research division of the Virginia Commonwealth University Rehabilitation Research and Training Center. At the Center we have promoted a supported work approach to competitive employment for mentally retarded and other developmentally disabled individuals over a six year period.

## Method

### Participants

The 155 individuals, who served as participants for the three analyses described herein were labeled severely, moderately, and mildly retarded. They were placed in competitive employment by efforts of the staff at the

Rehabilitation Research and Training Center in the Richmond, Norfolk, and Virginia Beach areas of Virginia. The participants ranged in age from 18 to 63. The mean measured intelligence score was 50 with a range of 27 to 78. A total of 86% of these individuals were receiving Supplemental Security Income (SSI) or other government subsidy at the time of placement. Only 18% had earned over $200. in annual salary from sheltered or nonsheltered employment the year prior to placement. Once accepted as a potential candidate, participants were selected for job placement based upon the availability of an appropriate job into which they could be placed and trained.

## Intervention

Over the last six years, state and federal grants have supported the direct placement and training of mentally retarded persons in competitive jobs in several predominantly urban locations in Virginia. All participants placed in jobs received at least minimum wage or better from their respective employers from the first day of placement. All have received direct job site training, advocacy, and follow-up services through behaviorally based, individual instruction from a qualified job trainer suppled through the program (Moon, Goodall, Barcus, & Brooke, 1985). This model is known as the supported work model of competitive employment (Wehman & Kregel, 1984).

## Settings

The job settings selected for placement activities were limited only by availability of jobs and the willingness of employers. Over 125 companies have hired the participants. These have involved eight different categories of companies. These are food services, janitorial, industrial, non-profit services, commercial businesses, education, health care, and lodging. Company affiliations have included private profit, private non-profit, local government, state government and federal government. The highest percentage of placements have been accomplished in food service companies and the great majority have been in private, for-profit companies.

## Post Hoc Evaluation

The three analyses reported here assess the impact of supported work model intervention in a post hoc design. In that this investigation does not include a control or comparison group, it is not possible to report a cause and effect relationship between the training program and the outcomes. However, since most participants had been considered by related service providers as not ready for competitive employment, had never worked before, and since referral sources were instructed to refer only those individuals who could not work without intensive, long-term job site training, confidence was increased that few participants would have been sustained in competitive employment without supported work services.

## Outcome Evaluation at the Systems Level: Benefit Cost Analysis

In applying a benefit-cost analysis procedure to the data of this longitudinal job placement and training program, Thornton's (1984) accounting model was utilized. Within this model we focus on group benefit versus cost data from three perspectives: the society, the taxpayer and the individual participant.

This procedure provides a factual representation of the benefits and the costs from a social perspective rather than individual benefit or predictive-type perspective. That is, the actual monetary benefits and the costs incurred due to intervention from the view of society, the taxpayer and the participant have been identified from permanent records and were included in the benefit-cost analysis. Thus, unlike many benefit-cost analyses which estimate and project possible benefits and costs, this investigation generally provides factual data gathered from clients records and other agencies.

The benefits and costs of the supported work model for 140 clients (in this particular analysis) are listed in Table 1. It can be seen that both the

Insert Table 1 about here

benefits and the cost vary depending upon the perspective being examined.

## The Benefits

The general benefits of the supported work model include: A) Increased monetary outcomes (earnings, fringe benefit, taxes paid); B) Decreased use of alternative programs (e.g., activity centers/workshops); and C) Decreased government subsidy costs (e.g., SSI, health care costs).

Within this paradigm, society benefits from increased earnings, new fringe benefits to the participant, and decreased cost of alternative programs. The taxpayer receives the greatest monetary benefits from taxes paid, decreased alternate program costs, and decreased government subsidy costs (SSI/Medicaid), and the participant benefits from earnings and fringe benefits.

## Costs

Costs of the supported work model also vary from each perspective but the general costs include: A) operational costs of the supported work program; B) minor decreased earnings from workshops the client whould have attended if not employed; C) decreased government subsidy to client; and D) taxes paid by client.

The costs from each perspective are as follows: society and the taxpayer must pay for the supported work model, society also loses the small sheltered workshop earnings the client could have brought in if s/he were attending a workshop. The client, in essence, pays the most, however, in 1) loss of government subsidy (SSI/Medicaid); 2) contribution of taxes and 3) loss of sheltered workshop earnings. It should be obvious that a competitive job would in most cases make up for these loses.

Benefit-Cost Procedures

The actual monetary benefits and costs for the supported work model for 140 clients over a six year period were identified from permanent records and information supplied by cooperating agencies. The costs incurred were subtracted from the benefits from each perspective to yield three figures showing the ultimate monetary benefit to society, the taxpayer and the participant accrued from the six year supported work model utilized in Virginia. These figures are also shown in Table 1.

Establishment of Benefits

Increased earnings = The gross income was collected for each participant and summed

Fringe Benefits. The U. S. Department of Labor (1980) suggest that 15 to 18 percent of gross wages for low wage earners are paid in fringe benefit compensation. Net income was multiplied by 15% to represent the value of fringe benefits.

Taxes Paid. Participants having increased earnings will pay additional income, payroll, sales, and excise tax. Therefore, such taxes are considered a benefit to all taxpayers. Later, taxes paid will be considered a cost to the individual participant in our analysis. Thornton (1984) suggests estimating increased taxes paid by use of an effective tax rate applied to the estimate of increased net income. Pechman and Okner (1974) estimate this rate to be 23% of gross income for low-wage workers. This figure was used to establish participant taxes paid (1,392.).

Decreased Use of Alternative Programs. A major benefit to the public of employment of severely handicapped persons is the reduction of expensive programming that does not lead directly to competitive remuneration. Adult activity centers, workshop programs, and public school programs are generally the kinds of services that our participants received or for which they were eligible (Hill and Wehman, 1983). The Virginia Department of Mental Health and Mental Retardation performed a study in 1981 to determine the average cost of day adult service programs. The statewide average was $5258 per client. This figure was divided by 12 and multiplied by the number of months a participant was employed to estimate costs for day programs for which we did not have specific annual budgets. The remaining program client-cost figures were determined by using the most recent annual budgets available. The figure for each program was then divided by 12 (by 10 for public schools) and multiplied by the number of months a participant was employed. The annual budgets utilized were as follows: vocational center, $4091; public schools, $3684; and sheltered workshop, $3738. If a participant was on a waiting list for a day program or was not receiving day support for any reason, financial benefit to taxpayer was not assumed. Thus, only reductions in alternative program cost are considered benefits only for those clients who actually were attending such programs.

Decreased Government Subsidy. Deductions in SSI or other forms of financial aid and decreased health care costs to the government are considered here as benefits to the taxpayers. These decreases in government subsidy; however, are also considered a cost to the individual and are added into the cost formula for client (i.e. the individual's benefits are reduced. This cost to the participant must be considered even though his/her income is far more advantagously affected by the competitive wages received as a result of the program).

Supplemental Security Income. (SSI) Although investigators evaluating the financial benefits of their vocational projects may be temped to simplify savings in SSI disability payments by taking the individual's monthly payment and multiplying it by the number of months worked, this method will result in an overestimation of benefit. This over-estimation is caused by not taking into consideration the regular, periodic adjustments in SSI regulations, some designed to wean recipients from public assistance. Many other flucuations can and do occur in the payment of SSI to individuals for a variety of reasons. The SSI payments in our sample were derived by computing actual SSI reductions due to each client's earned income over the period of their employment. Pay raises, periodic SSI inflation rate adjustments, and clients' living arrangements all affect the SSI payment on a month-to-month basis and have been included in each client's SSI savings computations.

Loss of Medicaid. Individuals who have been removed totally from Supplemental Security Income due to substantial gainful activity which at the time of this investigation was considered to be 9 months of employment and at a minimum of $300.+ per month, were not eligible for medicaid except under special qualifications. Participants in our program did not typically meet these qualifications. Consequently these individuals who do not receive health insurance as a fringe benefit and who are not eligible for Medicaid must purchase this coverage. In October, 1984, Blue Cross Blue Shield of Virginia offered single subscriber health coverage for $105.54 per month for participants ages 30-39. The mean age for the sample is 30 years. The number of months participants whould have had to purchase health benefits is multiplied by this rate to determine the mean health insurance cost per participant (see below). Concimmittantly this amount is subtracted from taxpayers since this same group (if medical costs were static between medicaid and private sector health insurance companies) would not be receiving medicaid benefits. There were 446 months where participants were uncovered by health insurance unless they purchased the insurance themselves, thus the mean participant cost for health insurance for the 70 months is $336. (446 * 105.54 / 140 = 336).

Establishment of Costs. The total program budget for the 70 months of operation ($767,000) was divided by the 140 participants placed to determine per participant program cost. The mean cost per participant over the 70 months was $5485. The mean months worked for individuals in this sample was 18 months. To determine an annual mean rate per participant per month employed we divided the cost by the mean months worked yielding the monthly rate and multiplied by 12 to get the annual rate (5485/18 = 305 * 12 = $3657).

Decreased workshop earnings. The U. S. Department of Labor (1977) reviewed a large sample of sheltered workshops (600), the mean annual income for workshop workers was $414. A 10% per year increase (to 1981 base date, see section on time related effects for discussion) for inflation was applied bringing the mean monthly income for workshp workers to $48. This often hidden cost was multiplied by the number of months each participant was competitively employed since s/he was prevented from earning this amount during that time. This algorythm was applied to all participants even if they had been rejected by a workshop or were on a waiting list.

Decreased government subsidy-Decreased SSI and government supplied health care costs. The identical figures used on these two variables in the calculations or two variables in the calculations or benefits to the taxpayer (2,342 and $336 respectively) above, were calculated as costs to the individual participant. These figures were derived in the manner described in the Benefits section above.

Taxes paid. The identical figure ($1392.) described above as a benefit to all taxpayers is used in the cost formula as a cost incurred by the individual participant. In any benefit-cost analyses, inflation, discounting, and extrapolation can affect monetary outcome measures. Each must be considered to determine if there is a significant effect on the outcome values.

Thornton (1984) suggests dealing with inflation by establishing all values from a specified base period. In our algorithim we use constant dollars on shadow values from costs established at approximately the middle of the time range. Fringe benefits and taxes paid were based on percentages of earnings and since earnings were tabulated in current dollars the inflation rate is automatically considered. Government subsidy payments were figured over the enture period and reported in current dollars as were program costs.

When benefits and costs occur in different times a benefit or cost in one time period may be worth more or less in another period even after inflation has been taken into consideration. To deal with this phenomena economists use discounting. However for this sample, discounting was determined to have negligible affect due to the fact that costs and benefits were collected simultaneously and would thus affect only the accuracy of the net value and not the positive versus negative outcome. Since this program is evaluated over a six year period the discounting affects on the net values would be minimal. Finally, extrapolation is not an affect in this model because projections about future costs or outcomes are not made.

## Results of Benefit Cost Systems Analysis

The monetary results of this post hoc analysis of outcomes associated with a competitive employment supported work program for persons with moderate and severe disabilities are also presented in Table 1. This table presents the benefits, the costs, and the computed net values from three perspectives: the participant, the taxpayer, and for society as a whole. Per participant benefit was $2078 and $290,920 for the group. The taxpayer benefit was $2851 per participant and $399,140 for the group. Society's benefit as a whole was $5275 per participant and $738,500 for the group. The total wages earned was $869,260.

In order to place these figures into a more meaningful perspective, a mean annual net value was computed. The net society value when divided by the 5.8 years of program operation yields $118,976 per year. The participant's monthly net increase while employed is $109. multiplied by 12 = $1308. per year benefit. The taxpayer's yearly benefit computes to $60,707.

## Outcome Evaluation at the Service Delivery Level

There are many ways to evaluate the effectiveness of employment programs for disabled persons at the service delivery level. In the state of Washington, for instance, O'Neill & Associates (1984) are utilizing hourly wages earned and number of hours involved in actual remunerative work for service delivery evaluation. These outcomes have been utililized statewide in critical evaluation of sheltered and nonsheltered employment programs, alike.

An additional evaluative measure used by our (Wehman, Hill, Hill, Brooke, Pendleton, & Britt, in press) employment program and other similar programs (Rusch, in press) several years ago was the calculation of the percent of individuals remaining employed to date. It is important to note that this measure loses its sensitivity with longitudinal programming such as the model described here for several reasons. First, this measure does not serve a longitudinal program well because in many cases employment services may have been delivered successfully to an individual for several years, yet if an individual is not currently employed s/he is not counted as a success. The definition of how long one must be employed to be counted as a success is not well defined in this relatively new service delivery system.

Secondly, and perhaps more importantly, this measure of total percent of participants remaining employed does not accurately represent a gradually expanding program such as that of the Rehabilitation Research and Training Center. The number of participants involved in the program has increased slowly each year as new referrals were accepted and job placement caseloads for trainers were increased. Naturally, the program has expanded greatly in the last several years, and many more participants had been placed in jobs during these latter years than in the early years. Therefore, if we stated that 55 percent of all the people we have ever worked with are still employed, it is possible most of these could have been placed in the last year only. With gradually increasing and decreasing caseloads it is more difficult to provide accurate outcome evaluation with group data of participants being served by an employment program.

In our program model, we have found two critical factors which, if included in the outcome analysis, greatly enhances the accuracy of our service delivery outcome evaluation. These are:

A) Total time (months) each participant was maintained in competitive employment in a calendar year (i.e., cumulative time on payroll in job(s).

B) Actual time (months) each participant could have worked in the labor market based on date of entry into that market in that same calendar year.

These factors, A & B, can be used in the following formula to establish a Annual Program Efficiency Index (PEI). This index represents modification of an employment index described by Halpern (1973).

$$\frac{A}{B} = \text{Annual P.E.I.}$$

Through this formula we are able to establish a useful index of program efficiency showing the percentage of time that the program is able to maintain participants in competitive employment given the actual amount of time that they could have worked in the labor market within a one year period.

The first factor in the formula, total time each individual was in competitive employment, is important because in the 1980's we now are interested in placement duration and less interested in simply counting the number of 60 day placements we are able to make. We are more appropriately concerned with how long these individuals can successfully remain in competitive employment. Further, our interest extends beyond any one particular placement. Instead, in that, the supported work model supplies follow-up and replacement services if necessary, our service delivery system must evaluate its effectiveness through total retention in competitive employment not just one job.

The second factor in this formula (actual time in labor market within calendar year) is also critical for the accuracy of our evaluation model in order that the program is not penalized for its gradually expanding nature. That is, clients are added to caseloads at different points in time because job trainers cannot place 10-20 clients at the same time. However, to evaluate the effectiveness of service delivery to clients with whom the program is actively involved, only the amount of time that they actually could have worked in the labor market should be considered in the formula - not the beginning date of the program itself or the beginning date of each year if the client is not accepted until, for example, mid-year.

Both factors of the formula are examined within the parameters of a calendar year (12 months) rather than the total history of the project. The reason for this is twofold. First, in that most human service organizations examine program activities on an annual basis rather than through the presentation of on-going success summaries, we have translated these data into annual progress units for comparative purposes. Secondly, and most importantly, the nature of job placement activities in high turn-over areas of employment does not lend itself well to evaluation through summaries of on-going success. This is largely because it is not reasonable to expect placements in entry level employment to continue indefinitely. For instance, if one of our clients had been maintained in competitive employment for the entire year of 1979 yet lost his/her job in 1980, on-going success summaries would show that the individual had only worked one-fifth of the project's history. Ostensibly, this would not be a highly successful placement. This type of summary would mask what, in reality, was a most successful placement of 12 months with an individual who most probably had never worked before. In essence, the annual program efficiendy index provides more accurate evaluative data in that the long-term nature of the project does not expunge the successes of shorter-term placements.

Employment dates and retention records within our computerized data bank from 155 clients placed in competitive employment from January 1979 to October 1984 were subjected to the above formula (in 1978 the program operated only three months). As stated above, each year was treated as a separate study period. That is, only clients who were actively involved in the program during a given year were included in the analyses for that year. Thus, only clients who were added to a caseload during a given year or clients who were already employed as of January 1 of that same year and were receiving follow-up services were included in the calculations for annual program indices. To illustrate further, a client who lost his/her job in 1979 and was never replaced to date is not included in the analyses for subsequent program years. In that the program did not actively work with that client in those subsequent years, s/he is not included in estimates of program efficiency for subsequent years. A total program efficiency index is also given for summary purposes and represents the mean of the yearly indexes.

## Results of Service Delivery Evaluation

Table 2 shows the program efficiency index each individual program year.

- - - - - - - - - - - - - - - -
Insert Table 2 about here
- - - - - - - - - - - - - - - -

The numbers of individuals served during each of these study periods is also given. Annual program efficiency indices range from a low of 76% in 1981 to a high of 91% in 1979, the first year of the program. In the first few years of the Reagan administration as unemployment rates rose, our program efficiency indices showed decreases. For instance, in 1980, the program efficiency index is 10% less than 1979, the 1981 index is 15% less than in 1979 and the 1982 index is 13% less than 1979. The last two years of the President's administration, however, 1983 and 1984, our service delivery efficiency has shown a sharp rise to 85% and 83%, respectively. The program efficiency index is a useful measure which shows the percent of each year that clients on the average were maintained in competitive employment adjusted for when they actually entered the labor force that calendar year. Therefore, in 1983 and 1984, clients were unemployed only about 15% of the year after they actually entered competitive employment and were still actively involved with the supported work model.

## Outcome Evaluation at the Participant Level

The most apparent positive outcomes of supported work services are received by the individual participant. These include quantitative outcomes such as net monetary gain, hours worked, and development of work histories among many others. Supported employment services also greatly impact on the quality of life for these individuals. Over the last six years, this program has anecdotally documented remarkable changes in the participant behaviors, appearance, and even health after being placed and maintained in competitive employment for a sustained period. Unfortunately, until the program was funded as a Research and Training Center in 1983 we did not have the financial capabilities to study these phenomena in a controlled manner. At present, however, we are involved in a carefully controlled, classical experimental (competitively employed persons) versus control group (sheltered workshop employees) study examining pre-and post-employment behavior, performance and scores on seven "quality of life" measures. We are currently involved in the first wave of post-testing; reports should be available on preliminary results within one year. The seven measures include estimates on:

Health
Appearance
Social Interactions
Adaptive Behavior Scores
Speech and Language
Independence at Home
Integration Into the Community

Many other quantitative outcome measures sensitive to the impact of supported employment can be tapped from this program's extensive longitudinal tracking system. For instance, from pre- and post- employment records, we find that there is a 52% increase in independent use of public transportation after a minimum of three months after employment. We also find nearly a 10% increase in participants moving into less dependent residential situations either from the family home to a group home or from a group home to semi-independent or independent living.

In this preliminary investigation we are reporting the outcome of the mean length of job retention for the average participant in his/her first year in the labor market. We believe this is an easily understood unit of quantitative data regarding the impact of supported work services with our client population. It is an outcome which quantifies the development of a work history for persons previously not considered "ready" for competitive employment.

## Results of Outcome Evaluation at Individual Participant Level

Over the six years of this program, the average time employed for all clients is calculated at 565 days or approximately 19 months. Obviously, this figure is difficult to interpret in that some clients have been involved with the program for six years and some only six days. Therefore, the figure showing the outcome of employment retention in the first year in the job market given below enhances the interpretation of these group data. Descriptive statistics show that the average time employed in the first year in the labor market for this population of mentally retarded individuals who generally were labeled as not unemployable was 8.1 months.

Number of Days Worked in First Year in Labor Market
N = 135

Mean Days worked first year after date of hire: 240.85

Range: 14 to 365
Median: 277
Mode: 365

## Summary

Monetary and nonmonetary outcomes in a systems approach to program evaluation have been described for the supported work model to competitive employment. From a systems level, a service delivery level, and a participant level highly positive outcomes have been shown to acrue based upon the implementation of this model. What is lacking in this analysis is, of course, a comparison group to establish a cause and effect relationship. However, the outcome measures were described in a detailed manner in order that these analyses could be replicated with other programs for internal comparison purposes. Future research from the Virginia Commonwealth University, Rehabilitation Research and Training Center, will include such analyses.

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TABLE 1

## MONETARY OUTCOMES ASSOCIATED WITH A COMPETITIVE EMPLOYMENT SUPPORTED WORK PROGRAM FOR PERSONS LABELED MENTALLY RETARDED[1]

(Rehabilitation Research and Training Center)
(Virginia Commonwealth University)
May 1978 - Feb. 1984

N = 140

| | Societal | Particiant | Taxpayer |
|---|---|---|---|
| 1. Benefits | | | |
| A. Increased Monetary Output | | | |
| 1. increased earnings | $ 6209 | $ 6209 | — |
| 2. fringe benefits | 803 | 803 | - |
| 3. taxes paid/collected | — | — | 1392 |
| B. Decreased Use of Alternative Programs | 4266 | | 4266 |
| C. Decreased Government Subsidy | | | |
| 1. decreased SSI | — | — | 2342 |
| 2. decreased health costs | — | — | 336 |
| SUBTOTAL | 11278 | 7012 | 8336 |
| 2. Costs | | | |
| D. Operational Costs | -5485 | | -5485 |
| E. Decreased workshop earnings | -864 | -864 | — |
| F. Decreased Subsidy | | | |
| 1. loss of SSI | — | -2342 | — |
| 2. increased health costs | — | -336 | — |
| G. Taxes Paid | — | -1392 | — |
| COST TOTAL | -6349 | -4934 | -5485 |
| TOTAL BENEFIT | 11278 | 7012 | 8336 |
| - TOTAL COST | -6349 | -4934 | -5485 |
| = PER PARTICIPANT NET VALUE AFTER 70 MONTHS OF OPERATION | +4929 | +2078* | +2851 |
| GROUP VALUE (N = 140) | 690,060 | 290,920 | 399,140 |
| YEARLY BENEFIT BREAKDOWN | 118,976 | 1308**<br>per participant | 60,706 |

*Mean Months Employed for Study Population = 19 months

**(Net Participant Value / Mean Months Employed X 12 Months = Yearly Per Participant Net Value)

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[1] We are indebted to Dr. Craig Thornton for his help and previous work in conceptualizing this Benefit/Cost model.

## Table 2

### Program Efficiency Index (PEI) For Total Duration of Employment Program and by Individual Years

| Study Periods | Number of Participants | PEI |
|---|---|---|
| 1979 | 32 | 90.5% |
| 1980 | 48 | 81.5% |
| 1981 | 69 | 75.9% |
| 1982 | 78 | 77.8% |
| 1983 | 96 | 84.4% |
| 1984 | 110 | 82.7% |
| 1979-1984 | 155 | 82.1% |

Program Efficiency Index = Percentage of time that participants were maintained in employment out of total possible time in labor market.

# TIME LIMITED TRAINING AND SUPPORTED EMPLOYMENT: A MODEL FOR REDISTRIBUTING EXISTING RESOURCES FOR PERSONS WITH SEVERE DISABILITIES

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# Abstract

A model for improving employment services to persons who are severely disabled utilizing existing state and local financial and personnel resources is described. The model services are based upon the supported work model of competitive employment used successfully with severely disabled persons from 1978 to 1985 in the State of Virginia. These services include job placement, direct job site training and advocacy, on-going assessment and extensive follow-along services if and when needed. The paper advocates the use of this model in any location utilizing time-limited funds and services of the vocational rehabilitation department for the initial intensive training to job stabilization. The provision of the critical long-term follow-along services would then be shifted to state and local agencies such as Developmental Disabilities, Mental Retardation Services, Social Services, and private organizations.

# Time Limited Training and Supported Employment: A Model For Redistributing Existing Resources For Persons With Severe Disabilities

Supported employment is receiving major attention from federal authorities in the Office of Special Education and Rehabilitative Services at the U. S. Deptartment of Education (Will, 1984a) and also at the U. S. Department of Health and Human Services, Administration on Developmental Disabilities (Elder, 1984). Supported employment has been described as:

> "paid work in a variety of settings, particularly regular work sites, especially designed for handicapped individuals (i) for whom competitive employment at or above the minimum wage is unlikely; and (ii) who, because of their disability, need intensive, on-going support to perform in a work setting" (Federal Register, 1984).

Supported employment services have evolved in order to meet the needs of the thousands of severely disabled persons who have not received employment services or who have been considered to be "too hard to place or train". Generally, supported employment is targeted for those with moderate, severe, or profound mental retardation, multihandicapping conditions, autism, and the other very difficult handicapping conditions.

Time limited employment services (Will, 1984b) have been rehabilitation's traditional response to helping individuals with handicaps receive services. Time limited employment has distinct beginning and ending points; unlike supported employment, time-limited services are not on-going throughout the individual's employment tenure.

The supported employment services described in this paper are based upon a philosophy which holds that the disabled individual's total independence from habilitation providers service is not necessary for successful, long-term employment. That is, society and the disabled individual still benefit from employment (e.g., wages, reduced dependence on government aide, more normalized life, etc.) regardless of whether the disabled individual receives supportive services from public or private agencies. It will be shown further that this traditional view of "total independence" in the individual's employment situation is in large part responsible for the exclusion from employment habilitation services of severely disabled persons who might be enabled to work productively and earn decent wages. Our work at the Virginia Commonwealth University Rehabilitation Research and Training Center (RRTC) demonstrates the substantial success which traditionally unemployed severely disabled mentally retarded persons have had in competitive employment when supported work services are provided (Wehman, Hill, M., Hill, J., Brooke, Pendleton, & Britt, in press; Hill, J., Hill, M., Banks, Wehman, and Goodall, 1985).

A critical aspect involved in promoting supported employment services nationwide is the lack of a suitable funding mechanism (Revell, Wehman, and Arnold, 1984). Traditionally, vocational rehabilitation (VR) agencies have purchased time limited services for individuals who are expected to be totally independent in employment after a reasonably short period on the job. Furthermore, pre-employment services have been purchased which purportedly lead up to employment, but in too many circumstances do not. Rarely have rehabilitative services been purchased which immediately result in paid, unsubsidized employment for persons who are significantly retarded. The distinction between the traditional purchase of pre-employment services and the use of VR funds to purchase employment services under the supported work model is critical.

We believe that VR agencies need to take a leadership role in altering how funding is provided for supported employment services. We also believe that cooperative interagency efforts are essential through the time-limited (or transitional) services of rehabilitative service agencies and the long-term service and financing capabilities of public and private agencies. These agencies include Departments of Mental Health and Mental Retardation, Developmental Disabilities, Social Services, and private organizations, and for school-age individuals, the public school system.

A strategy for cooperative funding through the use of these varied resources includes two primary components.

1) The use of vocational rehabilitation's financial resources for "time limited or transitional services" to fund initial training and stabilizing efforts for a client in a competitive job; and
2) The funding of supported employment services or long-term follow-up by state and local public or private agencies (i.e., the agencies currently expending funds for adult day care work adjustment, or sheltered work stations).

It should be noted that we are emphasizing the use of existing resources, i.e., redirecting funds from uses that produce lesser outcomes to those which yield greater outcomes. The case for reallocating funds will be developed in four sections. First, the problems of the traditional vocational service delivery system will be discussed and documented. Second, an improved, modernized service system will be described. Third, implementation guidelines within the existing constraints of resources and funding authority will be given. Fourth, specific service provision funding issues will be addressed.

## Statement of the Problem

### Sheltered Employment

According to the President's Committee on Employment of the Handicapped in 1974 six to seven million disabled persons were unemployed yet could benefit from employment programs. More recently a U. S. Commission on Civil Rights in 1983 estimated that between 50 and 75 percent of disabled persons are unemployed. There are 5700 sheltered workshops nationally which attempt to meet the needs of "unemployed" disabled persons. A large number of these persons are mentally retarded (Whitehead, 1979). Day activity centers often function as an overflow system for the sheltered workshop (Will, 1984a).

The U. S. Department of Labor (1979) reviewed a large sample of sheltered workshops (600). A 251% increase in the client population of certified sheltered workshops from 1968 to 1977 was reported. This increase documents the vocational habilitation systems increasing reliance on the sheltered workshop as the primary employment service provider for certain disabled persons. Since sheltered workshops have traditionally served as the principal source of employment for severely disabled mentally retarded persons, it stands less as an employment option than it is a pre-destined track for them.

Fortunately, programs designed to serve disabled persons are receiving more critical evaluation. Several studies of sheltered programs indicate that there are significant problems in meeting the needs of persons with severe disabilities which vary from workshop to workshop. For example, in the same U. S. Department of Labor study, only 12% of regular program workshop clients were placed into competitive employment (this includes placement rates only; retention rates are not given); hourly wages increased only 9% in 5 years, and the average hourly wage for all mentally retarded clients was $.58 per hour. These data support the contention that severely disabled individuals are not receiving full opportunities for remunerative employment when employed in traditional segregated settings.

It is not constructive to blame the sheltered workshop for the lack of client movement into competitive employment. The operational problems that sheltered workshops face in competitive employment initiatives are numerous.

Some of these problems are listed below:

1. There is no clearcut national policy statement for promoting competitive and supported employment for all severely disabled persons.
2. Financial support from referring agencies is not provided for competitive job placements.
3. Financial support is not provided for direct job site training in natural job environments which most clients would require to succeed.
4. Monetary support is not provided for follow-along job maintenance.
5. Rehabilitation personnel training programs have not provided the training technology to help workshop staff improve their skills for suppported and competitive employment outcomes.

## Current Rehabilitative Services

Sheltered workshops and the accompanying overflow programs often called adult activity centers frequently serve as long-term holding tanks for a "difficult to place" group of individuals. It is becoming more evident that vocational rehabilitation agencies are not adequately serving this group (Whitehead, 1979) . Studies by the U.S. Department of Labor (1979) have identified wide service gaps for severely disabled persons. Most states are experiencing little success in moving severely disabled mentally retarded individuals into competitive employment. Other 'severely disabled' populations are also experiencing significant difficulties in competitive employment (President's Committee on Employment of the Handicapped, 1974). In 1983, the Virginia Department of Rehabilitative Services (DRS), the state VR agency, was examined by the Virginia Department of Management Analysis and Systems Development (MASD). Excerpts from the MASD Report on DRS delineate some of these difficulties being experienced by a VR agency in providing employment oriented services to persons with moderate and severe retardation:

> ...Lack of service to moderately and severely mentally retarded is cited as a problem by mental retardation counselors, clients, representatives of advocate groups and of the State Department

> of Education, special education program. Job placement for the lower functioning mentally retarded client, in the form of intensive on-the-job assistance for those who need this service ... [is advisable].
>
> ...Intensive [follow-up] on-the-job assistance is another apparent need for mentally disabled clients who have been placed in full time jobs in a sometimes stressful environment. Moderately and severely retarded persons make up the largest client group in state/ sponsored sheltered workshops. Because of a low success rate in keeping them on jobs with conventional follow-along techniques, long-term sheltered employment has become accepted as a way to keep the clients occupied in a non-residential setting. However, at least two major projects in Virginia have shown that it is possible to place some moderately retarded individuals in competitive jobs. Therefore, unless practices are changed, DRS counselors will continue to find many moderately and severely mentally retarded too severe to benefit from the VR program, in terms of employability.

Not only does vocational rehabilitation have difficulty placing persons who are severely disabled in jobs but the traditional system of case closure, typically 60 days after placement, precludes essential follow-up services to clients and employers. Model job placement programs of persons who are mentally retarded around the country are now showing that it is comparatively simple to place severely disabled persons in competitive jobs (e.g., Bates & Panscofar, 1984; Rusch, in press; O'Neill & Associates, 1984; Wehman, Hill, M., Hill, J., Brooke, Pendleton, & Britt, 1984). The most challenging part is keeping them in their jobs for sustained periods of time. Thus, unfortunately, our current vocational rehabilitation system discontinues services just when most severely disabled persons need them most. The rationale for 60 day closure is, of course, derived from rehabilitative practices with less severely disabled groups who tend to achieve job independence within short periods of time. Naturally, because vocational rehabilitation departments have not traditionally provided extended on-site training to severely disabled persons, these agencies have little data with which to base re-evaluation of the 60 day criterion for this new service population.

The Virginia Department of Rehabilitative Services recognized this need for alternative services leading to competitive employment for severely disabled persons. In 1978, with innovation and expansion monies from the federal government, the state rehabilitation department funded 'Project Employability'. This project implemented by Virginia Commonwealth University (VCU) demonstrated the success of supported competitive employment for the severely disabled/mentally retarded population (Wehman, Hill, & Koehler, 1979). Recently the National Institute of Handicapped Research (NIHR) established a Rehabilitation and Research Center at VCU in May 1983. In July of 1984 the RRTC was approved as a vendor to the Department of Rehabilitative Services for Transitional (time limited) community and job based training services. Follow up and maintenance support has been established by two local community service boards which derive most of their financial support from the Virginia Department of Mental Health and Mental Retardation. Many of the alternative strategies of programming and funding discussed here are derived from longitudinal data and experience with competitively employed persons with mental retardation in Virginia.

In summary, the blame for high unemployment rates and poor wages of severely disabled persons certainly cannot and should not be attributed to any one agency.

Furthermore, it is questionable whether we can expect single agencies to possess the capacity to fully serve the diverse group of individuals with all disabilities, mild and severe. An improved system of cooperative, interagency services aimed at improving the employment rates of persons who are severely disabled is described below.

## Effective Employment Services

A supported work model of competitive employment such as the one used by Project Employability and the current program at the Rehabilitation Research and Training Center at Virginia Commonwealth University, provide the basic framework for the modernization of vocational rehabilitative services needed for severely disabled pesons. Other exemplary programs around the country have been involved in similar activities over the last decade to examine the vocational needs of persons who are more severely disabled (Paine, Bellamy, & Wilcox, 1984; Kiernan & Stark, in press; Rusch, in press; Wehman, 1981). Most of these programs would agree that there are at least four components to effective vocational intervention for persons who are more severely disabled. These are: 1) direct job placement through careful job/client compatibility analyses; 2) direct job site training and advocacy; 3) on-going assessment and intervention until the individual is well entrenched; and 4) follow-up services as needed for job retention, re-placement, etc. Some model programs also include an extensive pre-job training component as integral to the model (Rusch, in press).

Traditional rehabilitative services have generally included only job placement, the first component of the supported work model, which as previously mentioned, is comparatively the easiest component of the four to complete. Another key difference between time limited and supported work, and traditional rehabilitation efforts is the intensive daily 1:1 contact between the client and a qualified job trainer followed by gradual reductions of assistance as the individual becomes more competent and well accepted in the job.

It should also be obvious that other state and local human service agencies or private agencies do not, traditionally, provide any of the components to the model. Instead, such agencies spend time, money, and energies on "getting individuals ready" for the first step, i.e., job placement. In contrast, the supported work model of competitive employment infers that the bulk of programmatic efforts will be required after the job placement, not before.

Clear descriptions of this model have been described elsewhere (e.g., Wehman & Kregel, in press); therefore, each component will be briefly discussed below.

1. Job placement through job/client compatibility analysis. Appropriate job placement is based upon an accurate assessment of the job requirements, the client's skill and abilities, and the compatibility of each to the other. The exact requirements of the job and personality characteristics of the coworkers should be compared to skill levels and behavioral aspects of the client in a one to one correspondence. Systematically planning for job to client compatibility significantly enhances the chances for job success.

Other important aspects of placement is that the job trainer participates in meeting initial transportation needs, explains the impact of income transfer benefit reductions, assists in job interviews, and other critical factors. Traditional placement procedures often assume that it is the client's or caretaker's responsibility to deal with these concerns. Our experience shows, however, that without intensive assistance in these areas persons with severe disabilities do not achieve job placement.

2. Direct job site training and advocacy. Job-site training is not a new concept; however, few models provide active trainer involvement in the early phases of the placement and then on a gradually decreasing basis as in this model.

Usually the already too-busy employer must act as a trainer (as in the traditional vocational rehabilitation on-the-job training program). Unfortunately, this results too often in little or no organized training. Data from the supported work model indicate that it is essential to train both specific skills and adjustment to the work environment beginning at the point of placement. This involves training skills using behavioral techniques as well as providing extensive advocacy services on the behalf of the client with his/her coworkers.

3. On-going assessment and intervention. The third component of the model, on-going assessment and intervention, marks another major difference between the supported work model and more traditional models of rehabilitation. In traditional approaches, a counselor places a client and then periodically checks with the employer. This type of assessment, however, is insufficient for many persons with severe disabilities who need on-going assessment and intervention for success. Adjustments in the individual's job or training must be based upon data, not on subjective decision-making.

4. Follow-up services. With the supported work model, follow-up services can include regular on-site visits to employers, phone calls, periodic reviews of supervisor evaluations, client progress reports and parent evaluations. Since retarded persons are frequently at risk of losing their jobs in competitive environments with little notice, follow-up support is imperative. This strategy has been viewed by some as being too expensive, but benefit-cost analyses of the outcomes of using this model clearly refute this notion (Hill and Wehman, 1983; Hill, M., Hill, J., & Wehman, 1985).

It is important to note that with some clients this phase of service may include only semi-annual phone calls to the client or the employer. In contrast a few clients may require extensive assistance on a regular daily basis. The intensity of this phase is based upon the client's and the employer's needs to meet the job requirements. While this too may appear on the surface to be too expensive, recent data indicate that in a majority of cases such services cost the same or less than an activities center or sheltered workshop placement (Hill and Wehman, 1983). This appears true even when daily interactions are provided with the client directly on the job site. While in competitive employment, the individual experiences the benefits of a more normalized life and becomes a contributing taxpayer.

### Intensity and Duration of These Components

Figure 1 depicts these services and shows that all clients receive the same intensity of services on the first three components of the model (i.e., job placement, training and advocacy, and on-going assessment/intervention). It also shows that these three components are time-limited (i.e., there is an anticipated beginning and ending date). The fourth component of this model, follow up services, in essence is supported employment (i.e., the individual is competitively employed, however he/she is receiving follow-up support services). Figure 1 shows that this phase is not time-limited in that there are no limits on how long the service should be provided except as dictated by client need. Figure 1 also illustrates the varying intensity in follow-up services, ranging from infrequent to daily interactions with an individual based, again, upon need. The ultimate goal is always sustained employment, not total reduction of services.

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Insert Figure 1 about here

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## Implementation Guidelines: Funding Time Limited and Supported Employment Through Existing Resources

A supported work approach to competitive employment will require redistribution and reallocation of currently existing funds. A portion of the monies currently going into segregated settings for vocational training and work adjustment will need to be redistributed to direct placement, job site training and behavioral asessment in nonsegregated employment settings.

Interagency participation will be necessary to provide the long term follow-up services of the supported employment phase in community job settings. These long-term support services could be funded through agencies which normally fund day activity-type programs and sheltered employment. These organizations vary from state to state and may include mental health/mental retardation agencies, agencies for the developmentally disabled, Social Services, as well as private organizations.

### Time-limited Services

Using the improved employment services model described above, in the time limited category, the rehabilitation agency would use case service dollars to support the first three components of the supported work model, i.e., direct job placement by a job coach, job training and advocacy, on-going assessment and intervention until the client is firmly entrenched in the job. In this model money spent on work adjustment would be used in nonsegregated environments. We stress once more that sheltered workshops should not be blamed for currently accepting referrals from rehabilitation counselors, and the rehabilitation counselor, having so few vendor alternatives to choose from, also cannot be blamed for selecting segregated work adjustment programs. However, if given a wider variety of alternative programming options, it stands to reason that fewer inappropriate work adjustment placements would be made.

This proposed model requires the state rehabilitation agency to provide the initial job site training until the support required for job maintenance levels off and becomes static, i.e., the individual is stable in the job. State rehabilitation agencies can finance this in three ways. The first is to provide the service with their own staff, the second is by vendor fee for services rendered, and third is by providing a block grant for the service. It should be noted that all three financial mechanisms could be utilized in varying degrees, dependent on local support agency configuration.

Each method will require extensive rehabilitation counselor involvement. The rehabilitation counselor must take the lead in insuring services for job placement, initial training, and intervention toward client-to-job stabilization. Although such a program tends to be extended, it is still time limited. That is, once a participant stabilizes at a consistent level of staff intervention time he/she would be considered non-transitional and the case would be closed. Post-employment services could be used for temporary increased intervention needs such as a position being redefined where retraining is required. Re-opening a case would be no different than for other rehabilitation clients. For example, a participant who becomes unemployed may need additional placement and transitional training at the new job site. It is important to note that the case is only closed with respect to transitional employment. Follow-up and maintenance services would continue under what the federal government is now calling 'Supported Employment'. These long-term services would not, however, be funded by vocational rehabilitation agencies.

## Supported Employment (Follow-Up Services)

Key to the success of competitive employment is the long-term follow-up provided subsequently in the supported employment phase. It is at this point that interagency cooperation is imperative.

Public and private agencies which provide the funding for day activity programs and workshops currently supply long-term follow-up services to disabled persons attending such programs. Although these services are usually restricted to segregated settings, such agencies have a clear precident for funding long term follow-up services and could well apply the funding to extended support services in competitive community job settings.

Once rehabilitation agencies withdraw at the end of the time-limted services phase, state and local agencies could provide the long-term follow-up support essential to the success of the model. Again, these services can range from extensive and on-going, to only minimal interventions, depending on the client. In any case, individuals requiring a high degree of follow-up would be attending a day program if they were not employed. What is proposed here is that funds for day programming or a portion of these monies may be used in maintenance of these new taxpayers in integrated employment settings. Based on findings of Hill, M., Hill, J., & Wehman (1985) many persons with severe disabilities would require significantly fewer tax dollars for support when being served in community job settings through the supported work model instead of day centers.

This is, indeed, the national trend. Developmental disability programs Mental Health/Mental Retardation Departments, and Social Service agencies are being prompted to redesign their service structure to accomodate the new federal initiative to provide supported employment services (Federal Register, 1984).

Existing program funding constraints of individual agencies are such that an interagency funding mechanism is essential for the on-going success of the supported employment model and, ultimately, for the continued success of clients maintaining competitive employment. State and local agencies and foundations are the most appropriate funding sources for these services, but they must change their thinking about how to utilize existing funds for better employment outcomes.

These agencies could themselves provide the service or contract with appropriate vendors.

In summary, the role of the rehabilitation agencies is to initiate appropriate services to clients in the initial phases of employment. Once an individual reaches a maintenance or follow-up level, additional follow-up support is provided by appropriate state and local human service agencies.

### Rehabilitation Counselor and Local Case Management Interaction.

Staffing for potential consumers of these services could include a consumer/client advocate, the rehabilitation counselor, personnel representing the agency providing follow-up and maintenance, and any potential vendor of employment services. Representatives of the various organizations would orchestrate the transfer of service and/or financing responsibilities among agencies based upon a formal cooperative agreement.

The follow-up and maintenance agency would be kept aware of the individual client's job placement and progress. Ample prior notice would be given of the anticipated date of the termination of time limited services. All parties would agree to the date of transfer from time limited to supported employment services.

The key person in the initial success of this model is the rehabilitation counselor. The counselor must decide whether to purchase services for a given client, the intensity of services, and when to fade job coach services. These decisions will be based on the best evaluation data at his/her disposal. To assist the case managers in these difficult decisions certain evaluative data should be provided by the placement and training agents. These may include written evaluations by employers, reports on amount of intervention time needed, data from direct observational assessment, reports of any incidents on the job site, client progress data on skill development, etc. Table 1 describes these types of data in more detail.

Insert Table 1 about here

## Funding of Time Limited and Supported Employment

In the RRTC model, changes in a participant's status from time-limited services to supported employment are based on the ratio of staff intervention time needed to the number of hours worked by the individual. When the intervention time required to maintain persons in their positions is in a process of change from intensive to a stabilized amount of time, we would construe this to be part of the time-limited service component. Once the intervention time stabilizes for a significant period (e.g., 60 days), we would construe this to be entry into the *supported employment* phase which requires less direct service but is still essential for success. This would be the dividing line for the funding of the individual client by responsible agencies and for transfer from the rehabilitation agencies time-limited services to state and local agencies for long-term follow-up services.

Figure 2 represents an illustrative process for these interagency cooperative efforts. It is important to note that the case presented in Figure 2 is for illustration purposes only. Cooperative agreements drawn up among agencies attempting to implement this model would develop their own specific guidelines for funding. In our model, initial training is considered over when the intervention time required to maintain the individual in the job falls below 33% of the individual's working hours for two consecutive weeks. Vocational Rehabilitation funding for this activity would fall under status 18. This criterion is based upon longitudinal data tracking of the intervention time and training patterns for clients who were successfully retained in jobs for at least six

Insert Figure 2 about here

months after the intensive training was reduced. The next phase, the fading period is considered over when the average intervention time falls below 20% of the individual's working hours for a two week period. Rehabilitation funding for this phase and the stabilization phase is under status 22 (employed yet still requiring service). The third phase depicted in Figure 2, stabilization, is considered over if the intervention time is no longer required for the participant's continued employment or for more severely disabled individuals, when intervention time does not radically fluctuate (more than 20% for 60 days). It is suggested that a successful rehabilitation closure is appropriate at the end of the stabilization period given a interagency team decision and based upon the recommendations from the rehabilitation counselor.

The final phase of this model (i.e., follow-up services through supported employment) is equally as critical for the success of the individual. It is this retention phase which traditionally has not been provided and has contributed to our inadequate current service system. This undersupported phase is the least expensive in terms of staff time and the most productive in terms of job retention. Services in this phase may continue indefinitely based upon the client's need. Funding for this phase could be provided by agencies like the Department of Mental Health and Mental Retardation, Developmental Disability agencies and any other organization which typically support on-going day programs.

Noble, (1984) suggests that agencies which benefit monetarily from employment services being rendered to their client should contribute to the financing of the instrumental services. The Social Security Administration for example, could reallocate a portion of the funds recovered, from reduced transfer payments for Supplemental Security Income recipients as a result of greater employment, to supported employment service agencies. In effect, this means investing in programs whose benefits exceed the cost of providing the service. The validity of this approach is documented by recent benefit cost analyses of transitional and supported work employment programs (Hill, M., Hill, J., & Wehman, 1985).

## Rate Setting Structure

An appropriate method of monitoring services provided by a community based service provider must be established, especially if the private vendor model is utilized. Because community based operations are dependent on the employer's willingness to allow training 'on site' and since usually only one client can be trained at a time, an alternative to the traditional 'daily rate' payment structure is required. One way of dealing with this is to provide a block grant for the job coach team, another way would entail reimbursement after intervention time is provided for the client.

Block funding can be used to initiate placement and job training teams and then be shifted to the reimbursement method once the team is established. One of the benefits of this system is that funds follow the client according to their level of need. Those individuals with minimal barriers then are not unnecessarily held back by a 'lack of funds'.

In setting a rate for the service all staff support costs should be included. That is, the intervention time rate would include a portion for personnel expense as well as for travel, supplies, office space, telephone, and administrative and clerical support. The non-personnel expenses will be minimal due to the fact that all services are provided in a community setting, where costs for maintaining the 'facility' are born by the employer. Additionally, an hourly rate accounting system is easily facilitated due to the 1 to 1 nature of the service system.

## Intervention Time As A Basis For Fee For Service

Table 2 shows categorical descriptions of varying uses of staff intervention time. It is important to differentiate some of the responsibilities of trainers for rate setting purposes. Various funding sources may agree to fund some activities and not others. However, the number of hours for payment would be the sum of all intervention time provided.

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Insert Table 2 about here

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Since clients do not attend a standard 'day' program the mode of payment should be based on the services provided each client in hours as opposed to days. To establish an equitable hourly rate all staff support costs would be considered. Table 3 is an hourly rate breakdown based on staff intervention time and itemizes the costs associated with providing community based employment training personnel. This model could be used by any organization which provides one to one service to consumers.

- - - - - - - - - - - - - - - -

Insert Table 3 about here

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A block or reimbursement method of monetary support would use this hourly monitoring system to account for consumer intervention needs. In the block format the number of hours needed would be deducted from the initial total ($10,000, for example, in block monies would be equivalent to 426.62 intervention hours; $10,000 /$23.44 per hr. rate = 426.62 intervention hours). The vendor would bill after the fact in the reimbursement method. Each individual community would have to establish the most acceptable format for payment.

To estimate agency average costs for each phase the rate ($23.44) would be multiplied by the mean hours utilized in each phase as exampled by Project Employability data in Figure 2. The mean intervention time for each phase is based on intervention provided for 147 client's by the RRTC and Project Employability, intervention time can be expected to differ according to the local employment situation, the number of hours per week the client works, and on the compatibility levels of person to job.

Table 4 presents cost estimates for each phase of the model by multiplying the mean hours of intervention (RRTC and Project Employability) for each phase by the estimated rate ($23.44). The rate may also differ dependent on local costs.

- - - - - - - - - - - - - - - - - - - - - -

Insert Table 4 about here

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The costs estimated above are not extraordinary, in fact, in most cases greater funds per client are expended on alternative programs with far less beneficial outcomes (Hill, M., Hill, J., and Wehman, 1985).

Regardless of the cost and service accounting method it is recommended that an evaluation and initial training period be authorized to allow for immediate placement should an appropriate position be identified. A minimum of eighty-four hours of intervention time are suggested as appropriate to provide for the participant's screening and full time intervention coverage at the job site for the critical first two weeks on the job.

Following the initial authorization an agreed upon monthly projection for future intervention time would be established by the agency case manager and the vendor, these projections would be based on progress information gleaned from training activities at the job site. The current case manager would authorize funds for service up to this projected level of needed service. Individual client requirements will fluctuate, however, great variation can be monitored by the authorization procedure. Re-authorization would be negotiated at regular intervals. Additionally an authorization procedure would guarantee case manager interaction.

Estimating per client expense must take into account the success associated with continued job retention. Intervention hours can only be accumulated for clients continuing to work successfully. The significance of this is that funds for supported employment can only be spent on successful endeavors.

Establishing the appropriate amount for block funded time-limited and supported employment services can be done by calculating the annual per job coach staff costs. This is facilitated by multiplying the projected total annual staff intervention hours by the hourly rate ($23.44 per hr. * 1288 staff annual intervention hours (Hill, 1984) = $30,216. per direct service staff). In determining a block annual amount, multiply the number of direct service staff needed by the annual staff cost. It should be emphasized here that this figure includes all support costs from supervision, to travel, to office supplies, etc..

Table 5 following depicts a process for establishing time-limited (transitional) and supported work job coach teams utilizing existing state and local resources.

- - - - - - - - - - - - - - - -
Insert Table 5 about here
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## Summary

This paper reviews problems associated with the current vocational habilitation system for severely disabled persons and recommends the implementation of more effective employment services for persons who are severely disabled similar to those being examined in the State of Virginia. Emphasis has been placed on interagency cooperation and redistribution of existing resources to implement time limited and supported work employment services.

The key factors in improving employment services for persons with severe disabilities are:

1. Establishing mechanisms for agencies to reallocate funds to improved employment outcomes for persons with disabilities.
2. Providing on-going client support in the community at job sites, based on the client's need for intervention to retain competitive jobs.

3. Affecting smooth transition of responsibility for client support from time limited service provided by the state vocational rehabilitation agencies to on-going support from agencies which traditionally support day activity programs and sheltered workshops.

4. Establishing appropriate intervention service rates for service providers and promoting an appropriate financial accounting system which delineates client specific costs.

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## Table 1

## Types of Data Provided by Placement and Training Agents

SUPERVISOR EVALUATIONS - In order to evaluate program efforts at job placement and client work adjustment, supervisor evaluation over time is a valuable measure. It is important to maintain regular evaluations because a one-time only assessment may not capture the supervisor's true feelings on that day. Also, the client's work performance may change over time, especially in the early stages of placement. A regular evaluation will be sensitive to these changes.

INTERVENTION TIME - A detailed account of all time spent by team staff would be broken down by date, hours, and minutes. The time categories are described in the next section on funding issues.

OBSERVATIONAL DATA - Specific behavioral programs are often required to maintain clients in competitive sites. Specific behaviors/skills/problems are recorded when necessary. This information would be provided.

INCIDENT REPORTS - When an incident occurs that is job threatening, the job coach must respond immediately to prevent a bad situation from getting worse. The following areas are considered and a written report is provided:

1. Situational antecedents 2. Incident/response 3. Resulting consequence
4. Comment/intervention strategy.

JOB SKILL REQUIREMENT/TASK ANALYSIS - A detailed breakdown of the tasks required to successfully complete the specific job is developed from employer/coworker interviews, observation, and, when necessary with employer consent, job modification. The job requirements can frequently be, re-sequenced, coworker traded, and/or generally streamlined to better accomodate the severely disabled mentally retarded employee. This job description will be provided to the rehabilitation counselor and updated periodically.

SUMMARY REPORT - A written review of the participant's employment and community status will be provided. Status changes such as hours worked, hourly wage, intervention time this period, cummulative intervention time, and projected future intervention needs would be provided.

## Table 2

## Client-Specific Intervention Time Definitions

1. Time On-Job - time spent at a client's job-site while the client is at work.

    a. Time Active - time actually spent working with the client, managers, supervisors, coworkers, or customers, including active observation. Includes anything which is done on-the-job to help the client, in a direct sense.

    b. Time Inactive - time between periods of active intervention. This is time during which the trainer-advocate (for fading purposes) has removed him or herself from active involvement with either the client, managers, supervisors, coworkers, or customers, and would leave the premises except that s/he intends to become "active" again shortly.

    Note: if the time away from the client and others is used to make work-related phone calls, write letters, or in similar activity, it would be recorded elsewhere for the appropriate client and not as "inactive."

2. Time Off-Job - time spent working for a particular client, but not at his or her job-site unless the client is not at work at the time.

    a. Travel or transport time - time used in either traveling to a job-site, meeting, or client's home, or in transporting a client somewhere, such as to work, the doctor's, an interview, or home. This does not include time spent returning from a job-site, meeting, or client's home, or from a place where the client was left after having been transported.

    b. Training time/guidance - time spent in either of these activities with a client while s/he is not at work. Problem categories would include: money handling, transportation, family, grooming, job skill practice, etc. In a situation where staff is meeting with a client and others, for example, his parents in their home, the question of whether to report that time here or under "employment advocacy" would depend on the primary focus of the meeting. It would be possible to report half the time of such a meeting here and half under "employment advocacy".

    c. Client program development - this is time spent developing intervention plans, analyzing a person's situation, or increasing the knowledge base concerning a particular client through discussion, file review, etc.

    d. Employment advocacy time - time spent advocating with other persons on a client's behalf, for purposes directly related to the client's employment. Such persons would include parents, employers, coworkers, customers, bus drivers, and bus information-persons. Activities reported here would include: job identification, job development, talking with a manager when the client or trainer-advocate is not on-the-job and discussing the value of work with parents.

e. Non-employment advocacy time - time spent advocating with other persons on a client's behalf, for purposes not directly related to the client's employment. Such persons could include group home staff, bank personnel, doctors, landlords, and case managers. Activities reported here would include helping with new living arrangements, discussing a client's seizure disorder with his doctor, opening a bank account, and arranging for counseling.

f. Client screening/evaluation - time spent either screening client to determine eligibility for services or time spent evaluating the employability of eligible clients. Any time spent analyzing information relevant to a client's employment potential is included here. The following when done for the purpose of screening or evaluation would be included here:

   a. reviewing client records;
   b. client interview;
   c. communication with parents/guardians/ involved agencies;
   d. observation of client in real or simulated work setting;
   e. job client compatibility assessments

## Table 3

## Monetary Components of a Supported Work Model Based on Hours of Intervention

| Component | % of Hourly Rate | RRTC Estimated Rate |
|---|---|---|
| *Direct Service Professional Staff Costs (wages and fringe benefits) | 64% | (15.00) |
| Occupancy Costs (office space for staff, 100 sq. ft. per) | 2% | ( .47) |
| Support Costs (telephone, postage, computer time, office supplies, equipment) | 4% | ( .96) |
| Transportation Costs (300 miles at .215 per mile) | 3% | ( .60) |
| Administrative/Clerical Costs (15% per direct service staff) | 27% | ( 6.41) |
| TOTAL | 100% | (23.44) |

*Non-client specific staff costs must also be considered to allow for administrative work, staff development, team meetings, etc. This non-client specific time is estimated to be approximately 30% of staff time. The number of staff hours available for client-specific intervention then would be the total staff hours minus 30% (46 * 40 = 1840 - (.30 * 1840) = 1288).

**A more detailed budget breakdown is presented in the RRTC Vendor Proposal to Virginia's Department of Rehabilitative Services, (Hill, 1984).

Table 4

Estimated Mean Costs Per Phase

| PHASE | PHASE DURATION | MEAN INTERVENTION HOURS | UNIT RATE | MEAN PHASE COST |
|---|---|---|---|---|
| Initial site training | 8 weeks | 92 | $23.44 | $2156.48 |
| Fading/ adjustment | 8 weeks | 36 | $23.44 | $843.84 |
| Stabilization | 8 weeks | 23 | $23.44 | $539.12 |
| Follow-up/ Maintenance | Annual | (17 / 8 * 52 = 110.5 hrs) | $23.44 | $2590.12 |

## Table 5

### Development of Transitional and Supported Work Through Vendored Service With State and Local Public Service Agencies

1. Establish the need for the service.

   a. Do current existing services meet all client competitive employment needs?

   b. Is transitional supported work currently on the menu of services for the rehabilitation counselors and/or case managers?

   c. Can support letters be obtained from:
      1. The Commissioner of the Rehabilitation Agency
      2. The Regional Directors
      3. The Rehabilitation Counselors
      4. Parents/Guardians
      5. A representative of the Developmental Disabilities agency
      6. A representative of the Department of Mental Health/Mental Retardation

2. If service is needed and supported then prepare a "Request for Approval as Vendor for Transitional Supported Work"

   Sections to include are:

   a. Purpose of request
   b. Background or description of existing inadequate services
   c. Definition of services to be provided
   d. Define how the model can fit into the current existing system
   e. Emphasize the importance of and describe the case managers roles
   f. Discuss monetary concerns and select an appropriate funding mechanism

      1. Intervention time as a basis for fee for service

      2. Rate Negotiation

      3. Projected Unit Rate

      4. Estimate costs based on previous intervention time histories

      5. Request block and/or hourly fee for service payment mode

3. Present Vendor Approval Request to Appropriate Agencies

   I. State Rehabilitation/Vocational Services

   a. Facility Division
   b. Vendor Services Division

   II. On-Going Day Support Agencies

4. If vendor request is:

| APPROVED | NOT APPROVED |
|---|---|
| Develop Relations with Case Managers/ Rehabilitation Counselors | Request written explanation of disapproval |
| a. provide inservice to potential service users | Lobby with supportive persons; identify barriers; compromise |
| b. insure comfort in using service by including regional director in all aspects of operation | Modify proposal; resubmit for approval; return to 4 |

5. Request Authorizations for Service

6. Provide services to participants

7. Design communication system for effective interaction with service user

8. Bill/account for service provided

9. Validate service through performance indicators

   a. Intervention Time
   b. Wages Earned
   c. Hours Worked
   d. Months Employed
   e. Supervisor Evaluations
   f. Incident Reports
   g. Retention/Duration Index

10. If high utilization is evident, expand service delivery services. If utilization is low, advocate at regional or state level to help stimulate local counselors to request the service.

11. Establish Interagency Agreements to Insure Initial Training Needs and Follow up and Maintenance Services

The following state and local agencies as well as others may need to be involved depending on the state system of service.

Department of Rehabilitative Services
Developmental Disabilities
Mental Health/Mental Retardation Agency
Community Services Boards
Public Schools

Figure 1

Time Limited Services and Supported Employment for Persons With Severe Disabilities

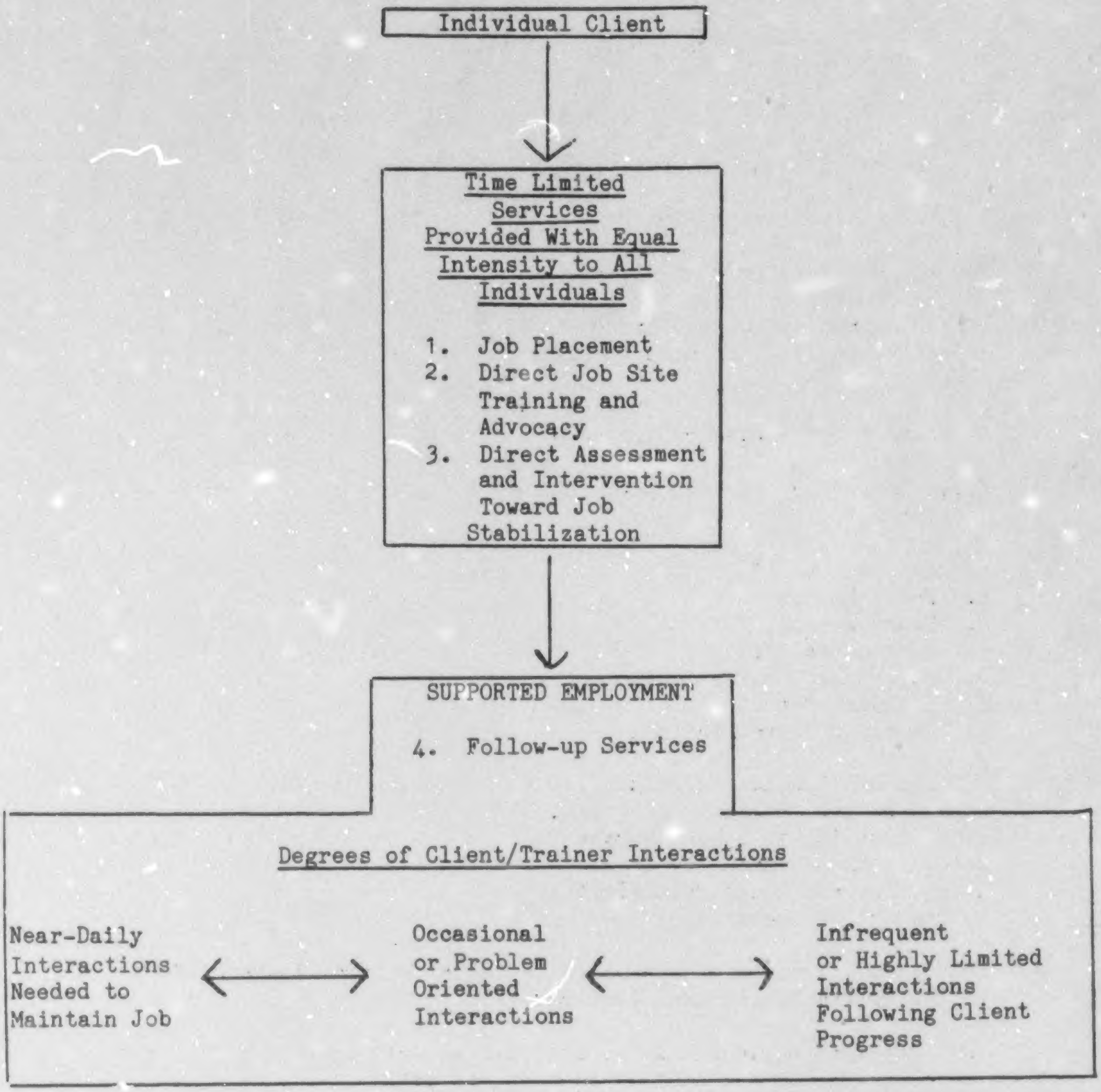
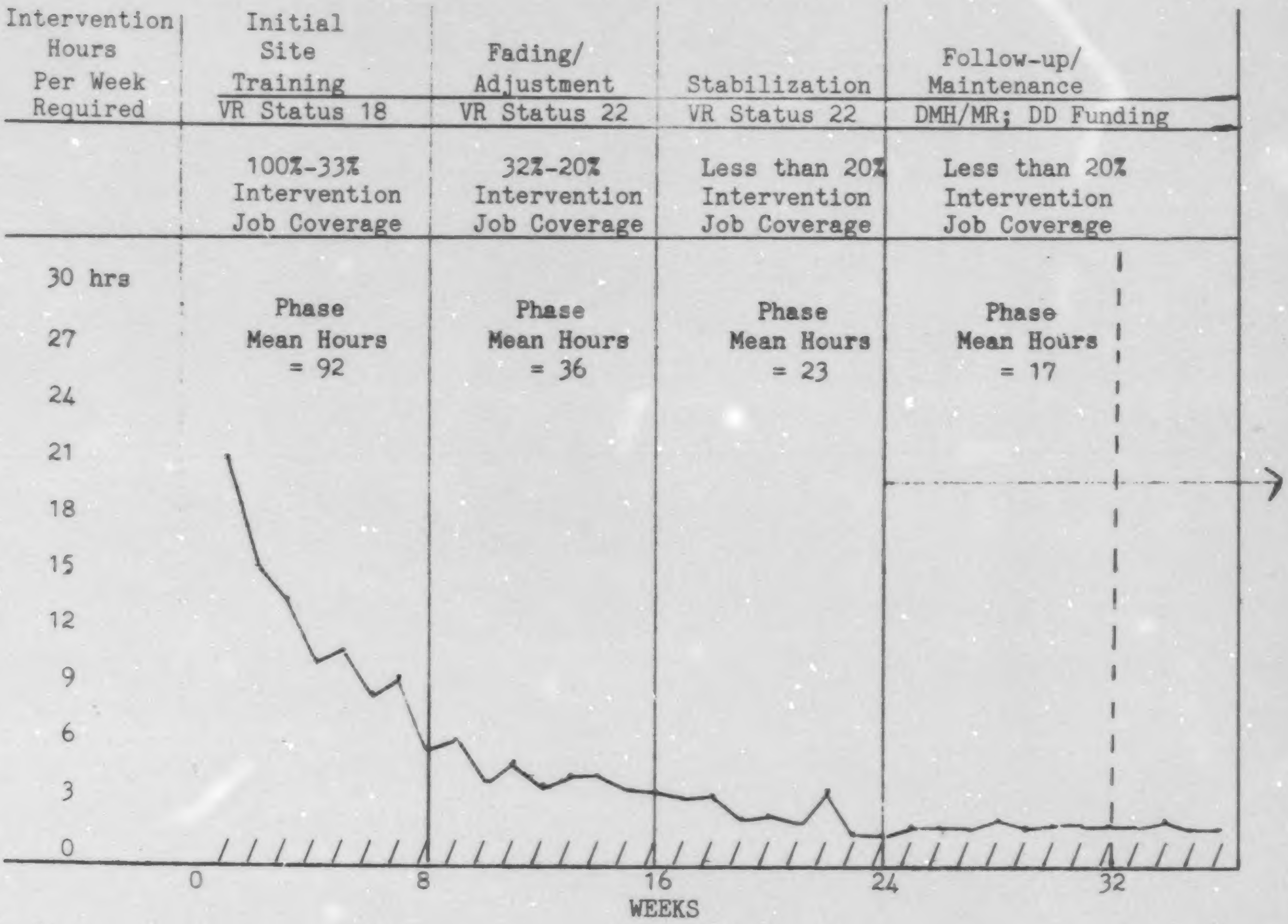

Individual Client
Time Limited Services Provided With Equal Intensity to All Individuals
1. Job Placement
2. Direct Job Site Training and Advocacy
3. Direct Assessment and Intervention Toward Job Stabilization
SUPPORTED EMPLOYMENT
4. Follow-up Services
Degrees of Client/Trainer Interactions
Near-Daily Interactions Needed to Maintain Job
Occasional or Problem Oriented Interactions
Infrequent or Highly Limited Interactions Following Client Progress

FIGURE 2

AN INTERAGENCY TRANSITIONAL MODEL
FROM TIME LIMITED TRAINING TO SUPPORTED WORK:

HOURS OF STAFF INTERVENTION REQUIRED TO MAINTAIN CLIENTS IN COMPETITIVE EMPLOYMENT*



* Project Employability May 1978 - February 1984; Full and part time positions.

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## Section II: Transition From School to Work

In this section there is a specific focus on papers which examine follow-up data from mentally retarded graduates in Virginia. These data look at employment status as well as independent living competencies of this sample. A lead paper in the section presents a model for vocational transition followed by other papers on the public school role in improving employment opportunities and what teachers can do to improve curriculum. This section reflects the national priorities for more attention to transition.

# FROM SCHOOL TO WORK: A VOCATIONAL TRANSITION MODEL FOR HANDICAPPED STUDENTS

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# Abstract

The purpose of this paper is to present a three stage vocational transition model for handicapped youth who move into adulthood. The model is characterized by the need for secondary programs which reflect functional curriculum, integrated services, and community-based instruction. The transition process should be initiated well before graduation, should involve parents and adult service representatives, and be formalized. Postsecondary vocational alternatives should reflect paid employment outcomes and there should be a diversity of options available for mildly, moderately, and severely handicapped youth. Finally, greater follow-up of handicapped students into adulthood by school systems is mandatory if we are to assess how effective our programs are in reducing the extraordinarily high unemployment rate of disabled persons in this country today.

# From School to Work: A Vocational Transition Model for Handicapped Students

In most school systems in this country today handicapped students are not guided into employment opportunities appropriate for their abilities. Although there are varied degrees of vocational training and education experiences made available to many handicapped students, systematically planned transition to positions in industry and business is not usually available. Similarly, communication between school personnel and adult service providers is typically limited. Hence those students in need of further intensive vocational training are not specifically directed to the necessary services.

To a very significant extent this vacuum of systematic vocational transition probably accounts for the continued high unemployment rate of handicapped individuals. The U. S. Commission on Civil Rights in a recent study (1983) reports that between 50 and 75% of all disabled people are unemployed. An excellent follow-up study of handicapped students in Vermont (Hasazi, Preskill, Gordon & Collins, 1982) reflects similar figures of unemployment as do the preliminary results of a follow-up study we are completing in Virginia (Wehman, Kregel, & Seyfarth, 1984). In Colorado, another follow-up study indicates that while over 60% of the recent special education graduates were working, there was a high level of underemployment and very poor wages (Mithaug & Horivuch, 1983).

This problem has not escaped federal attention. New program initiatives are underway through Public Law 98-199, the Education for Handicapped Children amendments. A major section of these amendments involves funds and support for secondary education and transitional services. In a rationale for this section of the Act it was noted:

"...the Subcommittee (on the Handicapped) recognizes the overwhelming paucity of effective programming for these handicapped

> youth, which eventually accounts for unnecessarily large numbers of handicapped adults who become unemployed and therefore dependent on Society. These youth historically have not been adequately prepared for the changes and demands of life after high school. In addition, few, if any, are able to access or appropriately use traditional transitional services. Few services have been designed to assist handicapped young people in their efforts to enter the labor force or attain their goals of becoming self-sufficient adults, and contributing members to our society." (Section 626, P.L. 98-199).

Transition is a term which has been used in professional circles frequently (Brown, Pumpian, Baumgart, VanDeventer, Ford, Nisbet, Schroeder, & Gruenwald, 1981). The U. S. Dept. of Education, Office of Special Education and Rehabilitative Services has made transition a major priority. The Assistant Secretary of this office, Madeleine Will, and her staff developed a conceptual transition model (1984) which is characterized by an emphasis on quality secondary programs, a description of generic employment services, time-limited employment services, and on-going employment services, and finally an array of different adult employment alternatives. Specifically, each of these three employment services are viewed as a "bridge" from school-to-work. Generic services are those that are already available to nonhandicapped people in the community i.e. personnel agencies, and would probably be used by mildly handicapped consumers. Time-limited services, on the other hand, are specialized rehabilitative or other adult services which are uniquely suited to help a disabled person gain employment. However, they come to an end at some point once the individual is successful. On-going employment services have traditionally not been available in most communities but would be aimed at hard-to-place disabled people.

The federal transition initiative has obviously spanned many new training efforts and stimulated renewed attention to this pressing problem. We have developed a specific definition of transition for the purpose of this paper:

> "Vocational transition is a carefully planned process, which may be initiated either by school personnel or adult service providers, to establish and implement a plan for either employment or additional vocational training of a handicapped student who will graduate or leave school in three to five years; such a process must involve special educators, vocational educators, parents and/or the student, an adult service system representative, and possibly an employer."

The key aspects of this definition are that a) members of multiple disciplines and service delivery systems must participate, b) parental involvement is essential, c) vocational transition planning must occur well before 21 years of age, d) the process must be planned and systematic, and e) the vocational service provided must be of a quality nature. Transitioning a severely handicapped 20 year old student who is learning letters of the alphabet, days of the week, coloring and other minimally functional skills into a different setting (such as an adult activity center) with the same training objectives accomplished little and distorts the purpose of the transition initiative.

It is the purpose of this paper to present a three-stage vocational transition model that encompasses the important components of facilitating the movement of handicapped youth from school to the workplace. Following this model, we will describe critical aspects of appropriate secondary programs which affect meaningful transition and review selected employment outcomes that need to be available in the community after school. Finally we present transition evaluation data on a group of mentally retarded young adults who are or have been competitively employed. These data are reviewed in the content of the conceptual model presented within this paper. This model applies to all handicapped students.

## A Model for Vocational Transition of Handicapped Youth

Facilitating transition from school to the workplace is not a one step process. It requires movement through three stages of school instruction, planning for the transition process and placement into meaningful employment. With the increased federal emphasis on transition, it is essential that service providers and agencies do not exclusively focus on the transition process while ignoring the quality of the foundation services offered by public schools and the range of vocational alternatives offered by community agencies. Previous efforts at interagency agreements which purported to ameliorate transition problems actually resulted, in all too many cases, in movement of a student from one inadequate school program to another inadequate adult program.

Figure 1 presents a model which we feel overcomes the shortcomings of earlier attempts at transition and builds upon successful efforts which have previously occurred. As illustrated in the figure an appropriate special education program is characterized by functional curriculum (Wehman, Bates, & Renzaglia, 1985) in a school setting which reflects integration with nonhandicapped peers (Certo, Haring, & York, 1983) and which provides for a community-based instructional model of school services (Wehman & Hill, 1982). These secondary program characteristics are fundamental to vocational transition. The actual transition process includes a formal individualized transition plan which is highlighted by significant parental input and cooperation from key agencies such as rehabilitation. Finally, neither the school program or planning process is sufficient without a range of varied work or employment outcomes available to students after graduation.

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Insert Figure 1 About Here

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## Public School: The Foundation of Effective Transition

Preparing students to be independent in their living skills and employable in the marketplace should be the major goals for the educational system. Without careful planning and preparation for post-school placement, these goals are seldom achieved by handicapped youth. However, over the past few years, critical program characteristics which contribute to effective programming have been identified (Bates, Renzaglia, & Wehman, 1981). These characteristics provide the foundation for meaningful transition from school to the workplace; therefore, it is of little value to discuss transition without crystallizing several key programming components. Critical characteristics of an appropriate secondary program include a) functional curriculum, b) integrated schools, and c) community based service delivery. These critical components of secondary programming are presented in Table 1.

Insert Table 1 About Here

### Functional Curriculum

Training activities must be designed to prepare persons for vocational opportunities that are available in their community. To ensure this outcome, school personnel must continuously assess available community employment and analyze the specific skills required for successful job performance. As a result of this activity, the vocational curriculum for specific students can then be identified. In designing functional secondary programs, selection of vocational skills must not be based on convenience and should not be based on donation of equipment to the school or on stereotypic views of what people believe handicapped youth should do when they grow up. Instead, functional curriculum reflects skills required in actual local employment situations. Usually, developmental curriculum materials and guides will not provide the most direct and efficient approach.

Functional curriculum will ensure that the training content is generalizable to potential jobs and will facilitate eventual movement into the labor force.

Often vocational training for handicapped youth does not begin until approximately 15-16 years of age. Since many handicapped youth learn very slowly, common sense dictates that vocational experiences should begin early and continue through their school years. Early vocational emphasis does not mean that we put five year old children on job sites for training. It does mean that we select appropriate vocational objectives for training at each age level (Wehman, 1983). The objectives should reflect behaviors which are important to community functioning and employment, be useful for the student, and be consistent with the expectations of similarly aged, nonhandicapped peers. It means that we begin early to instill in children and their parents the feasibility of employment and the importance of work for a normalized existence.

Hence the functional approach to vocational training is also longitudinal. Students begin developing skills early with increasing involvement as they become older. These longitudinal activities should result in gains in vocational skills (e.g., attending; competitive production rate; broadened range of jobs a student can perform; production quality; etc.) and in job related skill areas e.g., independent mobility; appropriate selection of clothing; ability to interact socially with coworkers; etc.). As a result, students will graduate with an increased chance of either already being employed or in an excellent position to become employed.

Integrated School Services

It is generally accepted that in order to prepare persons for life and work in integrated settings, it is necessary to provide these individuals exposure to and experience in dealing with the demands and expectations of these environments. Therefore, it is imperative that training occur in integrated settings. Emphasis needs to be placed on training which occurs as much as possible in integrated, as opposed to exclusively handicapped, facilities. The effective vocational training program also includes regular exposure to natural work settings. Natural work settings are defined as real job situations in the community. Students should train and work in the community whenever possible. This is not only to expose them to the community and work expectations, but to expose future employers and coworkers to their potential as reliable employees. Fortunately, there is a slow but perceptible move toward integrated school environments in the country (Certo, Haring, & York, 1983) and it appears that this form of service delivery will be a truly vital aspect of meaningful transition into natural work environments.

## Community-Based Instruction

Students over the age of 12 will need to participate for progressively extended periods of time. Job training sites should be established in vocations where there is a potential market for employment. Staff must be provided to conduct job site training. Systematic instruction should be conducted at these community sites. Behaviors that should be targeted include acquisition of specific job skills, production rates, mobility and interpersonal skills.

The necessity for community-based instruction is related to the two previously mentioned components of functional curriculum and integrated services. It should be clear that the best curriculum in the most integrated school will still not enhance employment focused transition without steady practice and experience in community work situations. Previous experiences indicate a principle reason for vocational failure on the part of significantly handicapped people is their lack of exposure to natural job environments like hospitals, fast food restaurants, and offices (Rudrud, Ziarnak, Bernstein, & Ferraro, 1984).

In sum, functional curriculum objectives prepare students to learn appropriate skills, an integrated training environment enhances interpersonal skills with nonhandicapped workers and other peers, and community training enhances each of these components by allowing students an opportunity to practice in real situations. Educational programming which reflects these tenets will help students prepare for the next phase in the model.

## Planning for Vocational Transition: The Process

As has already been observed, unless specific and formalized planning for vocational transition occurs, students will not receive a quality postsecondary program or enter the labor force. Therefore, even an excellent secondary program with good adult service alternatives available cannot benefit handicapped youth without planning and coordination of services. Referral back to Figure 1, the three stage transitional model described earlier, indicates the necessity of having a formal transition plan and delineating responsibilities of staff and participating agencies. Consumer input from parents and students and interagency coordination are essential. This process is briefly described below.

### Formal Individualized Student Plans

The focal point of the vocational transition process is the development of a formal, individualized transition plan for every handicapped student. Without a written plan specifying the competencies to be acquired by the student and the transition services to be received prior to and following graduation, the other major elements of the transition model will have little impact. The plan should include annual goals and short term objectives which reflect skills required to function on the job, at home, and in the community. Transition services should also be specified, including referral to appropriate agencies, job placement, and on the job follow-up.

Transition plans should be comprehensive in scope. Working in the community requires many different skills. In addition to specific job skill training, students must also be prepared to effectively use community services, manage their money, travel to and from work independently, and interact socially with other individuals. Plans must address all these skill areas to meet the comprehensive needs of handicapped students. Plans should also be individualized. Not every individual will be prepared for the same post-school environments. Similarly, each individual will require a different set of post-school services. Plans must focus on the needs of specific persons, rather than on the general needs of classrooms or categories of exceptionality. In addition, transition plans should identify who is responsible for initiating and following through on each specified activity.

Finally, transition plans must be longitudinal in nature. This requires the participation of all individuals and agencies involved in the transition process during the initial development of the plan. The plan should first be developed four years prior to an individual's graduation and then modified at least once a year until the individual has successfully adjusted to a post-school vocational placement. While in school, the transition plan should be considered a section of the student's IEP. After leaving school, the plan can be a component of a client's Individual Written Rehabilitation Plan, if he or she is served by vocational rehabilitation, or part of the individualized service plan of a community service agency. While the agency assuming major responsibility for services will change over time, the participants involved in developing and modifying the plan should remain the same during the course of vocational transition, thereby assuring continuity of goals and services.

## Consumer Input

The informed participation of parents and guardians is a critical component of the vocational transition process. Parents should be made aware of the employment alternative available to their son and daughter upon graduation. They must be provided an opportunity to acquire the knowledge and skills needed to effectively participate in transition planning. Public schools should initiate parent education activities to provide consumers with background information. Systematically planned parent education programs will improve the effectiveness and durability of parent involvement in the vocational transition process.

Parent education activities should begin at least by the time the student reaches the age of sixteen. Content should be based on problems and concerns identified through needs assessment activities. Horton and her colleagues (Horton, Maddox, & Edgar, 1983) have developed a parent questionnaire needs assessment which can be used to specify the needs of students and parents. The major areas of concern identified by the assessment process can then be addressed through parent meetings and program visitations.

Parent education meetings, sponsored by public schools or advocacy groups, are an effective method of training parents to represent their child's vocational interests. Meetings should: 1) orient parents to the community agencies providing post-school services to handicapped individuals; 2) familiarize parents with the specific responsibilities of special education, vocational education, vocational rehabilitation, and adult service programs in the vocational transition process; and 3) prepare parents to work with various agencies to develop transition plans and to apply for future services. Parental visits to local adult service facilities are also useful. School systems may be able to assist in arranging visitations. They may also provide information to parents about what to look for during a visitation and ways to compare different service programs. This "first-hand" information should help alleviate parental concerns and fears about their child's future, and should enable them to knowledgably participate in transition planning (Anderson, Beckett, Chitwood, & Hayden, 1984; Wehman, Hayden, & Kitt, 1984).

## Interagency Cooperation

Interagency cooperation refers to coordinated efforts across agencies such as public schools, rehabilitation services, adult day programs, and vocational-technical training centers to insure the delivery of appropriate, nonduplicated services to each handicapped student (Horton, Maddox, & Edgar, 1983). This concept has been widely advocated (Lacour, 1982; Greenan, 1980) as an effective management tool that will aid the development of fiscally accountable human service systems. Federal legislative mandates actively promote cooperative activities as a means of conserving resources and reducing inefficiency. The varied service needs of handicapped individuals demand the development of an array of available programs to meet the full service provisions of P.L. 98-199 and Section 504 of the Rehabilitation Act.

Unfortunately, efforts to encourage interagency cooperation have had little impact on the design and delivery of services. Although approximately 35 states have developed formal interagency agreements, and many communities have implemented local agreements, numerous problems persist. Agencies differ widely in their diagnostic terminology and eligibility criteria. Services continue to be duplicated, while communities fail to initiate programs (for example, supported work placement) which are needed to complete a local continuum of services. Political and attitudinal barriers also inhibit interagency cooperation. Administrators often enter collaborative efforts suspicious of the intentions of other agencies, defensive of their own "turf", and fearful that interagency cooperation may lead to budget cuts and termination of programs.

A number of specific steps can be taken to overcome the obstacles cited above and increase the likelihood of cooperation. Information exchange must occur to identify the legislative mandates, types of services provided, eligibility requirements, and individualized planning procedures of each of the participating agencies. Intensive staff development activities must then occur to enable administrators and direct service personnel in developing an understanding of the regulations and potential contributions of other agencies. This investigation should result in a restructuring of services to eliminate duplication and to guarantee that options are available to meet the service needs of all handicapped individuals. Finally, the process must result in the involvement of appropriate agencies in joint planning activities.

## Multiple Employment Outcomes

The outgrowth of appropriate secondary special education and a meaningful transition plan should be employment. However, in many communities there are few or no employment opportunities. Obviously, it is essential that communities provide many different vocational alternatives, or successful transition cannot occur. The prospect of having an adult activity center which only focuses on activities of daily living, or a workshop which provides only bench work is too limiting for the broad range of learning abililties of young handicapped adults. In this section, we present several types of alternatives which might be available for persons with all types of disabilities. It should be noted that we do not present these as a developmental continuum but rather a series of selected options or opportunities. Also, one needs to be aware that there are probably many other creative options or combinations of alternatives which may be considered. Figure 2 presents a brief schematic of several of the outcomes which are described below.

Insert Figure 2 About Here

### Competitive Employment

Many mildly handicapped persons have the ability to work competitively if given the opportunity (Brolin, 1982). These individuals, who may have physical, sensory or learning disabilities, will require only help from a work experience coordinator or rehabilitation counselor in job seeking and initial adjustment skills. If the school program experience have been rich in quality and diversity, many mildly handicapped persons will be able to work in a variety of fields, often beyond the stereotypical vocations of food service and custodial areas. Critical attention must be given to a) developing social interpersonal skills and b) providing more challenging types of jobs than have been performed in the past.

## Competitive Employment With Support

Competitive employment should also be made available to handicapped individuals who need more help getting a job, learning and adjusting to a job, and holding a job (Revell, Wehman, & Arnold, in press; Wehman, 1981; Wehman & Kregel, 1984). It is obvious from previous placement experiences that many persons with mild, moderate, and severe mental handicaps, autism, behavior disorders, or multiple handicaps do not fare well in competitive employment. Generally, there are difficulities in learning and performing the job, greater parental concerns, transportation problems, and also fears of losing social security payments. Yet fortunately there are programs and efforts underway which are now demonstrating how supported work through the use of an on-going job coordinator can help this historically unemployed population gain entry into the labor force (Brickey & Campbell, 1981; Rusch & Mithaug, 1980; State of Washington Developmental Disabilities, 1984; Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982).

A supported work approach to competitive employment emphasizes structured assistance in job placement and job site training (Wehman, 1981). A job coordinator is available extensively for individualized 1:1 training and follow-up. A strong focus of this model is helping individuals maintain their jobs. While at first glance it might appear too expensive, in fact, there is a significant cost savings due to the amount of money it costs to rehabilitate this population as well as a reduction in the social security transfer payments (Hill & Wehman, 1983).

## Enclaves in Industry

Another possible vocational outcome for more substantially disabled persons is the sheltered enclave. With this approach small groups of disabled individuals (less than six) are employed in business and industry under the daily supervision of a trained human service staff persons. The enclave is attractive because it offers disabled clients who traditionally have been excluded from employment services the opportunity to work in a natural work environment such as business or industry, usually for a decent wage. The hours and working conditions may be more limited and unlike either of the previously mentioned alternatives. Fringe benefits are not usually an option. In addition, although breaks and lunch provide for integration with nonhandicapped coworkers, with most enclaves disabled workers are placed together on a special set of tasks. The sheltered enclave may be a good opportunity for some severely disabled workers to eventually move into part or even full-time competitive employment.

## Specialized Industrial Training

Specialized industrial training is another employment option which usually takes place in a small industrial-oriented workshop setting. Contract revenue from business and industry provides wages for clients. This alternative has been available to severely and profoundly mentally retarded individuals, particularly in several states in the Pacific Northwest (Bellamy, Horner, & Inman, 1979; Paine, Bellamy, & Wilcox, 1984). This employment alternative is characterized by being small, usually with less than 20 workers. Typically, programs are based in the community and provide employment through performance of complex assembly and production contracts. Electronic parts assembly, chain saw assembly, and varied high technology tasks have been trained successfully with these workers going on to earn wages which they would never have approximated in a traditional work activity center. In addition, nonhandicapped workers may be employed in the same program. The specialized industrial approach requires a) a high competence level of staff in behavior modification and business skills and b) a commitment to small, community-based vocational programs which focus on employment.

It will be instructive to reiterate that there are other alternatives such as mobile work crews, work stations in industry, resource sharing and cooperative agreements with industry, etc. which should also be considered. In planning for transition, the nature of the options need to be evaluated carefully because these potential outcomes will determine the curriculum objectives upon which to focus, the best service delivery approach to select, and also help prepare the student, parent, and adult service providers for the transition. There needs to be a fusion of information about the student between the school personnel and adult service providers.

In selecting which outcome is appropriate one must consider availability of alternatives in community, student's choice, and student's capability. These factors obviously are interrelated and play a major role in determining where a student's first job might be. It should also be noted that none of these should be seen as necessarily terminal, but rather different options available.

## Transition Evaluation Data

In an effort to assess the employment status and transitional success of handicapped youth leaving school, we analyzed a selected amount of job placement data which have been collected over the past six years at the Virginia Commonwealth University Rehabilitation Research and Training Center. These data reflect information relevant to the 55 18-22 year old mentally retarded individuals we placed. While these data cannot be viewed as a specific empirical validation of the previously described conceptual model for transition, they do give some insight as to the employability of handicapped youth.

In Table 2 is an analysis of a number of the salient features of this sample. As can be seen, most individuals (77%) were receiving federal financial subsidies before placement, many (65%) came from segregated school programs, and only one-third had the opportunity to receive community-based vocational training. Furthermore, another one-third had received no vocational education. Approximately half were classified as moderately or severely retarded and one half with mild retardation or mild retardation and secondary handicaps such as cerebral palsy. The classifications reported in Table 2 were generated through the case records of the job placement coordinators responsible for each of these clients.

Insert Table 2 About Here

Using a criterion of six months of continuous employment in initial job as one measure of successful placement, it was determined that 55% of the population was successful and 45% unsuccessful. This needs to be partially qualified, however, by indicating that only about one-third (32%) were actually terminated or resigned with the other 13% being laid off due to the economic recession in 1981-82. As Table 3 indicates there were no statistically significant difference between the mild/multihandicapped group and moderate/severe group when it came to assessing successful versus unsuccessful job tenure. This is interesting in the sense that there is a common perception among many special education and rehabilitation professionals that level of retardation is a critical factor in gaining and holding competitive employment (e.g., Brolin, 1982). At least in this group that was not the case.

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[1] We are deeply indebted to Janet Hill and David Banks for helping us pull together the data below for this analysis.

Perhaps an equally interesting finding and one which tends to support the importance of integrated secondary programs is that there is a higher representation of people from segregated schools (50%) who fail in their first job before six months. Only 26.6% of those students who come from integrated schools fail during this time period. Obviously, bigger samples and a priori experimental controls will be necessary to further assess the generalizability of this finding. Finally we looked at several outcomes related to what happened to these clients as an apparent result of their new competitive jobs. Table 3 shows that there was an increase from 15% to 60% of clients being independent in their use of public transportation. Seven percent fewer were living with their parents after six months of employment. The prorated annual income prior to placement was $211; the new full-time income moved up dramatically to $7280.

- - - - - - - - - - - - - - - - - -
Insert Table 3 About Here
- - - - - - - - - - - - - - - - - -

As noted earlier, these data provide only a profile of what one group of mentally retarded young adults' competitive employment progress has been. We were only interested in the supported competitive employment alternative. It should be pointed out that these individuals received special demonstration services from federal grants to the senior author, and therefore, these were unique circumstances from most school systems and adult programs. Notwithstanding this fact, it is clear that we have a long way to go to improve the employability and especially retention of this population. These data only focused on a) those referred to our program and b) those placed and followed. They do not reflect the many young adults who may have had adverse conditions surrounding their prospects for employment (e.g., unsupportive parents) or those individuals for whomever were unable to find suitable jobs. What is required to validate the model described in this paper is to assess over a long period of time whether students who receive the secondary program and transition processes proposed perform better in competitive employment than those who do not. The data presented herein obviously is not a systematic assessment of this situation.

## Necessity of Student Follow-Up

In closing, it should be noted how essential it is for school systems to provide follow-up of their special education graduates. It will be very difficult for the field to assess how effective school instruction and adult service employment efforts are unless we regularly evaluate what former students are currently doing as young adults. There is no accurate way to determine the effectiveness of transition plans until school systems begin to more frequently monitor the success or failure of recent students' activities as adults. Therefore, a major recommendation of this paper is for all school systems to provide regular follow-up of special education graduates on a minimum of every two to three years. This report should be presented to the local school board and state agency for public instruction and become a matter of public record.

The follow-up process should uncover information concerning each individual's employment status, student and parent satisfaction with the individual's present status, employer evaluation of work performance, and consumer satisfaction with the transition program. Information regarding an individual's employment status, type of job, specific job duties, and current wages will aid in identifying the specific vocational training programs to include within the secondary curriculum. Discovering the reasons why some students are not currently employed may reveal areas in which existing programs can be improved. Attention should also be paid to the individual's own perception of his or her present job status. Is the individual satisfied with his or her current job? Would he or she be interested in obtaining a different job or receiving additional vocational training? Are the individual's parents satisfied with the work their child is performing? This information will not only aid in program development, but will also identify the support services most needed by program graduates. Employer evaluation of work performance will enable service providers to determine whether vocational training programs are equipping clients with all the skills necessary for success in employment. Finally, follow-up procedures should provide opportunities for former students, parents, and employers to express their opinions concerning the effectiveness of the transition process.

## Conclusion

In this paper we have presented a rationale and definition for meaningful transition and a three stage model for how to implement transition programs for handicapped youth. A major part of this article has been directed toward emphasizing the necessity for functional curriculum in integrated educational settings with community based training opportunities. In addition, it was strongly suggested that written individualized transition plans be established with significant parental input. Finally, a series of employment opportunities were presented as community service vocational outlets for special education graduates.

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Table 1

Secondary Program Components

| | | | |
|---|---|---|---|
| Most Effective | Integrated Service Delivery | Classroom/Community Based Instruction | Functional Curriculum |
| ↕ | Segregated Service Delivery | Classroom/Community Based Instruction | Functional Curriculum |
| Least Effective | Segregated Service Delivery | Classroom Bases Instruction | Developmental Curriculum |

Table 2

Analysis of Client Population (18-22 yrs. old) at Time of Placement
(N=55)

| Category | | Percent of Number |
|---|---|---|
| Sex: | | |
| Male | | 75% |
| Female | | 25% |
| Receiving Government Financial Support | | |
| Yes | | 77% |
| No | | 23% |
| Served in an Adult Activities Center | | |
| Yes | | 2% |
| No | | 98% |
| Served in Sheltered Workshop | | |
| Yes | | 20% |
| No | | 80% |
| Mean Years in Public School | | 12 Years |
| Type of Secondary Placement | | |
| Integrated | | 35% |
| Segregated | | 65% |
| Type of Classroom Placement | | |
| Self-contained | | 100% |
| Mainstreamed/Resource | | 0% |
| Type of Work Training at Secondary Level | | |
| None | | 33% |
| In-School Only | | 33% |
| Community Based | | 33% |
| Academic Skills | | |
| Arithmetic: | None or simple counting only | 41% |
| | Simple addition or subtraction | 59% |
| Reading: | None to limited word recognition | 64% |
| | Simple reading | 36% |
| Measured Intelligence | | |
| Severe | | 2% |
| Moderate | | 48% |
| Mild and/or Multiple Handicap | | 50% |

Table 3

Related Outcomes of Employment

| Prior to Placement for 55 Clients | | Outcomes of Placement for Same 55 Clients | |
|---|---|---|---|
| Independence in Use of Public Transportation | 15% | Independence in Use of Public Transportation | 60% |
| Living With Parents or Family | 92% | Living With Parents or Family | 85% |
| Mean Annual Income Year Prior to Placement | $211 | Mean Income Prorated Annually | $7280-Full time<br>$3640-Part time |

FIGURE 1

THREE STAGE VOCATIONAL TRANSITION MODEL FOR HANDICAPPED YOUTH

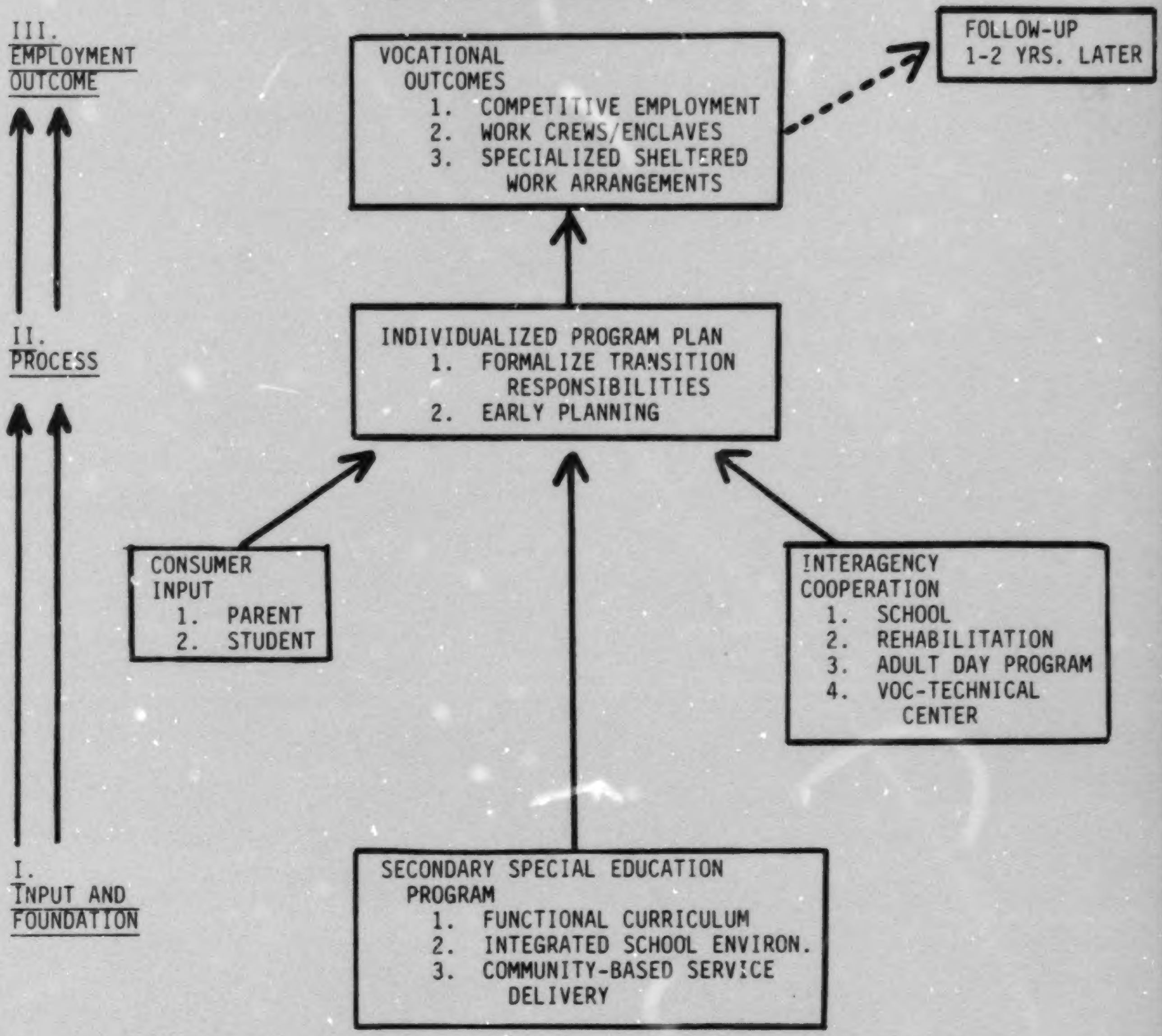
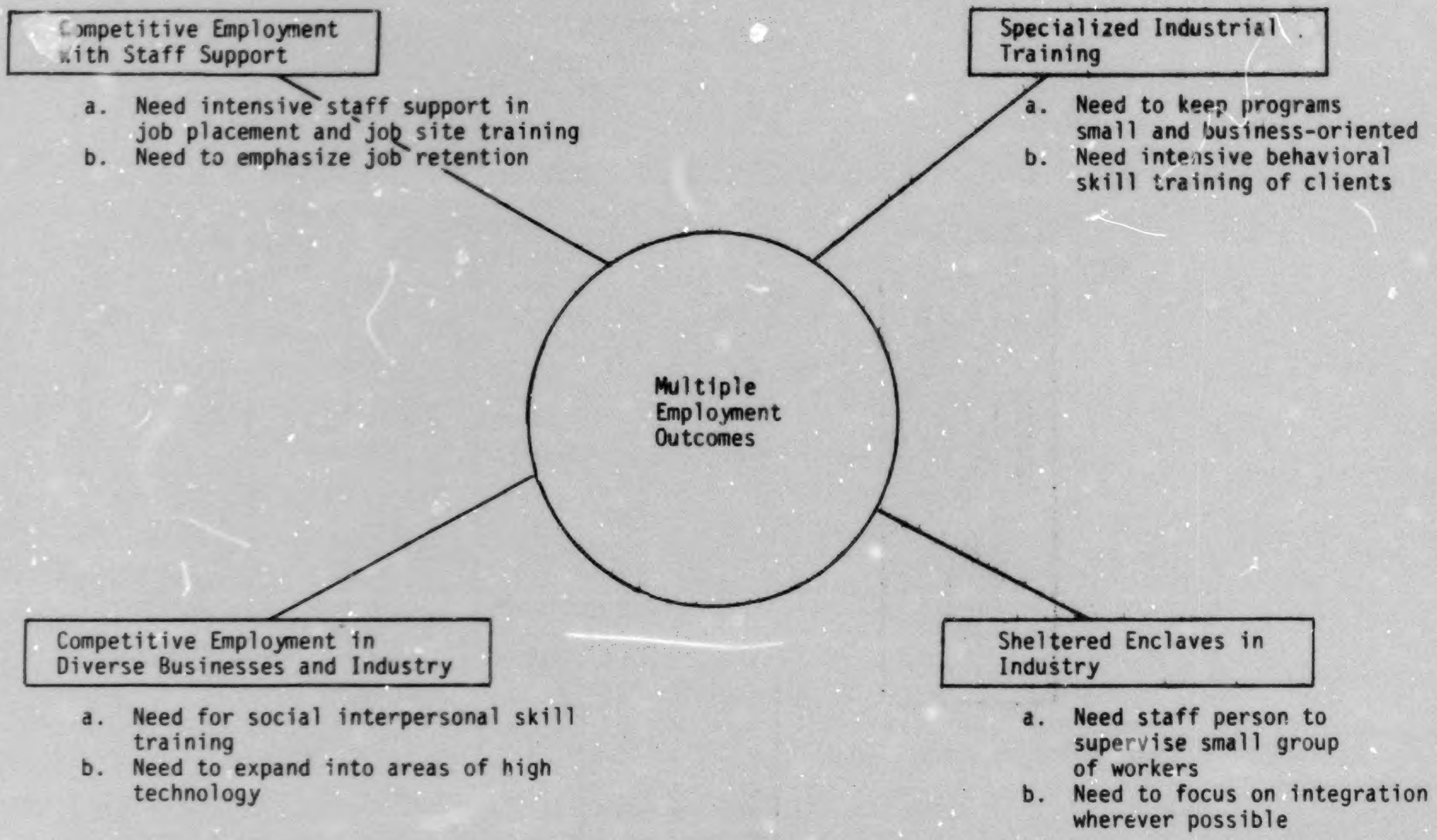

III. EMPLOYMENT OUTCOME
VOCATIONAL OUTCOMES
1. COMPETITIVE EMPLOYMENT
2. WORK CREWS/ENCLAVES
3. SPECIALIZED SHELTERED WORK ARRANGEMENTS
FOLLOW-UP 1-2 YRS. LATER
II. PROCESS
INDIVIDUALIZED PROGRAM PLAN
1. FORMALIZE TRANSITION RESPONSIBILITIES
2. EARLY PLANNING
CONSUMER INPUT
1. PARENT
2. STUDENT
INTERAGENCY COOPERATION
1. SCHOOL
2. REHABILITATION
3. ADULT DAY PROGRAM
4. VOC-TECHNICAL CENTER
I. INPUT AND FOUNDATION
SECONDARY SPECIAL EDUCATION PROGRAM
1. FUNCTIONAL CURRICULUM
2. INTEGRATED SCHOOL ENVIRON.
3. COMMUNITY-BASED SERVICE DELIVERY

Figure 2

Selected Employment Outcomes for Handicapped Youth


Competitive Employment With Staff Support
a. Need intensive staff support in job placement and job site training
b. Need to emphasize job retention
Specialized Industrial Training
a. Need to keep programs small and business-oriented
b. Need intensive behavioral skill training of clients
Multiple Employment Outcomes
Competitive Employment in Diverse Businesses and Industry
a. Need for social interpersonal skill training
b. Need to expand into areas of high technology
Sheltered Enclaves in Industry
a. Need staff person to supervise small group of workers
b. Need to focus on integration wherever possible

# WHAT IS THE EMPLOYMENT OUTLOOK FOR YOUNG ADULTS WITH MENTAL RETARDATION AFTER LEAVING SCHOOL?

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## Abstract

A total of 300 parents of mentally retarded young adults were interviewed in Virginia. These young adults had left special education school programs between 1979 and 1983. There were 60% of individuals labeled educable mentally retarded, and 40% trainable or severely mentally retarded. The focus of this study was to assess the employment status of these persons. General findings include: a total unemployment rate of 58%; almost three-fourths of those who were employed earned less than $500 per month; most individuals have never received professional job placement services and those who were employed had gotten their job through a family member or friend. It was concluded that school and adult programs need to emphasize much more work in the community based vocational instruction and job placement. Formal transition planning is essential.

## What is the Employment Outlook For Young Adults With Mental Retardation After Leaving School

An enormous amount of money is spent each year on special education, vocational education, vocational rehabilitation, and Department of Labor employment programs. For example, the combined federal budgets for special education and vocational rehabilitation exceed two billion dollars annually, with an additional 600 million dollars allotted for vocational education programs. Similarly, laws such as the Comprehensive Employment Training Act and more recently the Joint Partnership Training Act have also addressed, albeit to a lesser degree, the job placement and training of handicapped individuals. A U. S. Department of Education Office of Special Education and Rehabilitative Services policy paper (Will, 1984a) suggests that when state and local resources are included, total expenditures run into the hundreds of millions of dollars per year. Given the immense amount of public money spent on these activities, a fair question to ask is: how are these programs affecting the employment of people with handicaps? In short, are these vocational programs working?

Since the passage of the landmark Education for All Handicapped Children Act (P. L. 94-142) in 1975, very few studies have been conducted that address these questions. In 1978 the Department of Labor reported that 59% of all disabled persons were unemployed. Using survey techniques, Wolfe (1980) found that people with disabilities earn significantly less than nondisabled persons ($2.55 per hour compared to $4.50 per hour). An excellent 1982 study of 450 special education graduates was conducted by Hasazi, Preskill, Gordon, & Collins (1982). They found that almost 50 percent of these individuals were unemployed, with much higher unemployment rates among individuals who were labeled severely handicapped. Similarly, in a recent Maryland study of 1,450 developmentally disabled people (Crites, Smull, & Sachs, 1983) it was reported that only 5 percent of the individuals had regular jobs. The U. S. Commission on Civil Rights (1983) reported that 50-75 percent of all persons with disabilities were unemployed, results similar to those found in the earlier Department of Labor study.

A comprehensive study in Colorado by Mithaug and Horiuchi (1983) presents the most encouraging picture of adult employment. Sixty-nine percent of recent graduates of education who were surveyed indicated that they were employed at the time of the survey. However, when part-time jobs were removed, the employment rate dropped dramatically to 32 percent, and the wages earned by special education graduates were very low compared to nonhandicapped persons. For example, 43 percent of those employed earned at a rate less than $3.00 per hour. In Nebraska, Schalock and his associates (1984) found that 39 percent of all of the mildly handicapped special education students had no job.

The high rates of unemployment among special education graduates and the urgency of assessing the effectiveness of school-to-work transition efforts (Will, 1984b) prompted a follow-up study of mentally retarded young adults in Virginia. It was clear that both nationally (Elder, 1984) as well as in our own state, Virginia (Noble, 1984), that there are increasingly large numbers of special education students coming out of school requiring transition and specialized employment services. Our purpose in this study was to investigate a population limited to persons with mental retardation who had exited school programs during a selected period of time. Specifically, we were interested in questions related to employment rates, types of employment, type of public school vocational training program, and key factors influencing employment or unemployment. This report should not be construed as reflecting the employment status for all ages of mentally retarded persons in Virginia. The data reported in this paper are part of a larger study which also evaluated independent living and personal lifestyles.

## Method

### Sample

Mentally retarded young adults were selected as the only category of handicapping condition to assess. Unlike some of the previously reported surveys (Hasazi, et al., 1982), we did not attempt to collect data on every mentally retarded individual who left school. The study attempted to reflect the geographic diversity of the state of Virginia by surveying urban, suburban, and rural areas.

After consulting recent census figures, four different locations in Virginia were selected. The first was a highly urban inner city setting, the second was a large suburban area, the third was rural and suburban, and the final was very rural with a high poverty level. In only the last setting described did more than one school system participate. In this geographical area so few special education students were identified that four other small systems had to be involved. In each setting, all mentally retarded individuals who had left school from 1979 to 1983 were identified.

In each location, a professional was identified to conduct the survey who was familiar with the schools and adult services in the area. This mode of data collection was viewed as a means of reducing the problems associated with mail or telephone surveys. Each interviewer was paid and trained to accurately collect the necessary data. The interviewer was responsible for meeting with appropriate school officials to identify the names, addresses and phone numbers of all mentally retarded individuals to be surveyed. These records were only made available after permission had been received through our communication with the schools. Actual names of participants never appeared on any of the collected surveys since the interviewers were asked to code the surveys and keep the true names in a separate confidential file. A total of 444 names were generated.

### Instrument

A 60-item survey was generated. Many of the items contained multiple components, and about 25 items were directly related to employment status. Questions were usually worded in either a forced choice yes-no format or a multiple choice format in order to minimize the length of time required for each interview.

The instrument was developed after reviewing the Hasazi et al. (1982) survey. Some of the items were similar but modified for Virginia. Many of our items, however, were selected in order to determine the individual's current employment status as well as factors that affected this status. The employment section was subdivided into a series of questions for those who reported employment and another series for those who reported no employment.

### Field Testing

Once we had constructed the survey, 15 mental retardation professionals in academic and direct service positions in Virginia were consulted to provide input and feedback. After this information had been reviewed and integrated where possible, several special education graduate students were trained and asked to give the survey to parents of mildly, moderately, and severely/profoundly retarded individuals. In this way we could determine what parts of the survey were clumsy, too time consuming, or irrelevant. Survey modifications were again made based on this information.

### Interviewers

The four interviewers were the key to the success of the study. These individuals were all women with Bachelors or Masters degrees in the human services and with job titles of special education teacher, vocational placement specialist, or visiting teacher. They had lived and worked in their respective areas for at least five consecutive years.

All interviewers were brought to our central location for six hours and trained to conduct the survey. This procedure was done to minimize variations in how the interviews were conducted and to maximize uniformity of presentation. Each interview was expected to require 30-45 minutes to complete. Parents were typically expected to be respondents, although the mentally retarded individuals were encouraged to be available as well. The interviewers were paid in two installments, when 50 percent of the interviews were completed and then at the end of the study. A total of five months was anticipated for completion of the interviews (December, 1983 - May, 1984).

Interviewers were monitored on a weekly basis. A graduate assistant called each interviewer once a week at a predetermined time to assess whether the previously agreed upon number of interviews had been completed. Periodically the completed surveys were mailed to us for on-going coding and storage of information. At the end of the study, interviewers were given feedback on what the results in their location seemed to show.

## Results

A total of exactly 300 individuals were contacted and responded to the survey. Respondents were fairly evenly distributed among urban (30 percent), suburban (31 percent) and rural-suburban (38 percent residents).

### Demographic Information

Table 1 contains a breakdown of selected demographic data which profile key aspects of the subject pool. Two-thirds of the respondents were the mothers of the individuals surveyed. Fifty seven percent of the individuals surveyed were males, and the sample contained an equal distribution of Blacks and Caucasians. Subjects ranged in age from 17-24 (mean age = 21), with 53 percent of the sample being 21 years of age or younger. Sixty percent of the persons were labeled mildly mentally retarded and 40 percent had been served in programs for students labeled moderately or severely/profoundly mentally retarded.

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Insert Table 1 About Here
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Employment and Level of Income

Table 2 indicates that of 300 total respondents, 125 persons reported some form of employment (full time regular job, part-time regular job, or sheltered workshop) at the time of the interview for a 41.6 percent total employment rate. However, when part-time employment (seven percent) and sheltered employment (six percent) are removed this level drops to a 31 percent employment rate. Most of the individuals who reported employment were engaged in entry level service occupations. It should also be noted that a total of 14 out of 116 (12 percent) of the moderately and severely mentally retarded persons surveyed were competitively employed. Furthermore, of the 125 employed individuals, 25 percent report earnings between $51-$200; 48 percent report earnings of $201-$500 per month; and 17 percent report earnings between $501-$700 per month. Respondents were also asked how much total money the individual had earned since leaving school. Sixty-three percent indicated that between $1000-$4000 has been earned and 14 percent have earned between $4000-$8000. Over 20 percent had earned less than $1000 in total. Table 3 reports the type of jobs being performed.

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Insert Table 2 & 3 About Here
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Fringe Benefits

Fringe benefits were divided into five categories. Seventy percent of all those employed do not receive sick leave benefits; similarly about two-thirds receive no vacation benefits. Almost 70 percent do not have insurance benefits while 97 percent have no profit sharing plan. Sixteen percent report that they do receive free meals as a benefit.

## Transportation to Job

Of those graduates employed, less than half are dependent on others for transportation to and from their job, with 33 percent driven to work by a parent or friend and nine percent riding a facility bus. However, 55 percent report independently transporting themselves to and from work, with 29 percent driving themselves, having a parent or friend drive them to work, and nine percent riding a facility bus. Other modes of transportation included use of a carpool, walking, or a bicycle.

## Job Characteristics and Assistance in Finding Job

Over 83 percent of all those individuals employed expressed being happy or satisfied with their employment. Seventeen percent indicated that they were bored or were planning on quitting. In Table 4 there is a description of how those who were employed found their jobs. Friends, parents, relatives, and individual job searching account for well over 65 percent of how people located jobs. Rehabilitation counselors were reported helpful in only 11 percent of the cases.

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Insert Table 4 About Here

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## Nature of Rehabilitation and Mental Retardation Services Available

Of the total number of respondents, 75.7 percent say they have never received any services from a local rehabilitation counselor. Twenty-two percent received services occasionally and only two percent reported receiving service frequently. Similarly, 83 percent of all respondents could not name any counselor assigned to them or in their area. Eighty four percent of the respondents indicate that they have never received any local mental retardation services, with 11 percent receiving day program services and 3.7 percent receiving job placement assistance. Over 80 percent report they have never utilized the services of the Virginia

Employment Commission.

## Reasons for Job Separation

Those respondents who had previously been employed were asked why they had stopped working. A total of 8.4 percent of these individuals indicated that they had problems with their supervisor or coworker while another 7.4 percent reported they disliked their work. Some individuals, or 4.7 percent, quit because their jobs were abolished. A total of 4.4 percent indicate that they were told their work rate was too slow and another 4.1 percent lost transportation to and from the job. Less than one percent quit work because of social security payment concerns.

## Nature of School Vocational Program

A total of 69 percent of the respondents indicated that they had received at some point in their school program vocational training experiences which took place off school grounds and for which no pay was received; eight percent had participated in the former CETA program. Almost 10 percent have never received any vocational services. The questionnaire did not clearly discriminate between vocational services delivered by vocational educators versus special educators but anecdotally interviewers reported that very few of the respondents indicated formal vocational education participation.

## Discussion

The results of this study of the employment status of young adults with mental retardation are not encouraging, at least in the four geographical areas that were surveyed in Virginia. The unemployment rate was found to be almost 60 percent, and if part time and sheltered employment are omitted, this percentage accelerates to over 70 percent. These figures are highly consistent with national studies and reports from other states. Furthermore, those who are employed tend to earn very little money, with almost three out of every four earning less than

$500 per month. These results are particularly discouraging, however, when the age of the individuals surveyed is considered. These individuals are right out of school, and if they cannot find employment fairly quickly, then they are often unable to participate in any type of structured employment.

Another finding which is especially significant is that rehabilitation, mental retardation, and state employment services are not being accessed by these students as they leave school. One might almost speculate that there is no communication whatsoever between school personnel and the adult service agencies critical to successful transition from school to adulthood. Those individuals who were unemployed at the time of the study suggest they don't know of any available jobs or that there is no one to help them find a job or provide job training. Interestingly, 83 percent of the people who are working indicate they are quite happy being employed.

It is also notable that friends (25 percent), parents (17 percent), and individuals themselves (26 percent) account for over two-thirds of the ways initial jobs were located. If these data are accurate, then two things become apparent. One, the money invested in counseling and other services are not being used or are ineffective. The second conclusion which may be drawn is that parents need to be more involved in planning the process, given the significant influence they appear to have on obtaining employment. Similarly, social friendships and independent job-seeking practice are much more important in school programs than one might believe.

There are, unquestionably, methodological limitations which reduce the generalizability of this study. The lack of a comprehensive sample, the necessity of using parental respondents in most instances, and the fact that data were collected in only one state prohibits widespread conclusions from being drawn. On the other hand, the sample size of 300 was fairly large, and the use of on-site interviewers appeared to increase the accuracy of the data.

Notwithstanding the possible drawbacks in the design of this study, it is probably safe to conclude the following:

1. The unemployment rate of recently graduated mentally retarded persons in many parts of Virginia is very high, especially in view of the general unemployment rate of about five percent within the state. Also wages earned were very poor. In addition, fringe benefits limited to less than 30 percent of those employed.
2. The intellectual level of the graduates was not as big a factor in employment level as one might think. A total of 43 percent of those individuals labeled mildly mentally retarded were unemployed as compared to 78 percent of those labeled moderately or severely mentally retarded.
3. The network of families and friends play a major role in job location for retarded persons. This information underscores the necessity for mental retardation, school and rehabilitative services to do a much better job of working with families and retarded clients in the placement process. Clearly the services available to special education graduates are not being fully accessed, or if they are, are not being very effective. The use [illegible] informed job networks has also been reported in the Vermont study (Hasazi, et al, 1982).

What makes these findings most unfortunate is that there is now over 15 years of professional literature (Bellamy, Close, & Peterson, 1976; Gold, 1972; Melia, 1984; Rusch, in press; Wehman, 1981; Wehman, Hill, Goodall, Cleveland, Brooke, and Pentecost, 1982) that strongly suggests that individuals with mental retardation are capable workers. The sizable discrepancy between research and practice identified in this paper as well as other studies suggests that schools and and adult service agencies need to do a much better job of facilitating the transition from school to work. The current study only examined those individuals with mental retardation. When the sample is broadened to include all disabilities, transition problems will become even more complex.

It seems to us that all of the special education program efforts and dollars expended will be for naught if credible employment options cannot be obtained. It is time for special education and rehabilitation programs to move from merely providing services and to improve the quality of services for many more traditionally unserved persons. We need to look much more closely at how many professionals such as rehabilitation counselors and vocational educators currently function in the transition process. It may well be that many of these individuals will need to dramatically alter their current job roles and play a more active part in job placement activity. It is questionable whether the high level of unemployment which currently exists will be reduced until this happens.

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## Table 1

## Summary of Demographic Data

| | |
|---|---|
| Respondent:[1] | 67% Mothers |
| | 12% Fathers |
| | 7% Clients |
| Sex: | 57.3% Male |
| | 42.7% Female |
| Age: | 21%: 17-20 years old |
| | 12%: 20 years old |
| | 20%: 21 years old |
| | 17%: 22 years old |
| | 15%: 23 years old |
| | 15%: 24 years old |
| Race: | 49% Black |
| | 49% Caucasion |
| Home Location: | 38% - Rural/Suburban |
| | 30% - Urban |
| | 31% - Suburban |
| Type of School Program: | 60% - Educable Mental Retardation Classes in Regular School |
| | 24% - Trainable or Severe/Profound Mental Retardation Classes in Regular School |
| | 16% - Trainable or Severe/Profound Retardation in Special School |

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[1] Total N=300

## Table 2

### Employment Status
N=300

| | |
|---|---|
| Unemployed | 58.4% |
| Full-Time Competitive Employment | 28.6% |
| Part-Time Competitive Employment | 7.0% |
| Sheltered Employment | 6.0% |
| Unemployment of Mildly Retarded Persons | 43% |
| Unemployment of Moderately, Severely and Profoundly Retarded Persons | 78% |

## Table 3

### Nature of Employment (N=125)

| Job Title | Frequency | Percent |
|---|---|---|
| Janitor | 26 | 20.8 |
| Food Service | 24 | 19.2 |
| Sheltered Workshop | 17 | 13.6 |
| Farm Worker | 9 | 7.2 |
| Factory Worker | 6 | 4.8 |
| Lumberyard Worker | 4 | 3.2 |
| Construction | 4 | 3.2 |
| Office Worker | 3 | 2.4 |
| Bagger in Grocery Store | 3 | 2.4 |
| Stockroom Aide | 2 | 1.6 |
| Driver | 2 | 1.6 |
| Yard Helper | 2 | 1.6 |
| Domestic Help | 2 | 1.6 |
| Plumber | 1 | .8 |
| Junkyard Worker | 1 | .8 |
| Loader On Dock | 1 | .8 |
| Stocker in Grocery Store | 1 | .8 |
| Skilled Labor | 1 | .8 |
| Dishwasher | 1 | .8 |
| Logger | 1 | .8 |
| Hospital Cleaning | 1 | .8 |
| Grounds Maintenance | 1 | .8 |
| Messenger in Office | 1 | .8 |
| Greenhouse Worker | 1 | .8 |
| Busboy | 1 | .8 |
| Child Care Aide | 1 | .8 |

## Table 4

### Assistance in Finding Job N=125

| Mode of Assistance | Percent |
|---|---|
| Independently - by oneself | 25.8 |
| Friend | 25.0 |
| Parent | 16.9 |
| School Guidance Counselor | 12.1 |
| Rehabilitation Counselor | 11.3 |
| Local Community Program | 6.5 |
| Relative | 1.6 |
| Virginia Employment Commission | .8 |

# TOWARD THE EMPLOYABILITY OF SEVERELY HANDICAPPED CHILDREN AND YOUTH

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## Abstract

The purpose of this paper is to describe how special education teachers and other educational personnel can improve the employment prospects of children and youth with severe handicaps. Specifically, this article provides instructional guidelines and curriculum suggestions for students at the elementary age level, the intermediate age level and secondary age. A statement and rationale for early vocational intervention is also made with the emphasis being on community-based vocational instruction.

# Toward the Employability of Severely Handicapped Children and Youth

With an unemployment rate among handicapped individuals at 59% (Whitehead, 1979), and less than poverty-level wages of $414 per year common for many mentally retarded sheltered workshop employees (Department of Labor, 1977), the need for meaningful vocational programs for the severely handicapped is greater than ever. In fact, a recent report by the Social Security Administration (1982) indicated that a substantial amount of the Supplemental Social Security Income payments go specifically to unemployed mentally retarded workers. Moderately, severely, and multihandicapped individuals are usually included among their numbers. The amount of these transfer payments over the adult lifetime of an unemployed severely handicapped individual can be terribly expensive (Hill, & Wehman in press; Schneider, Rusch, Henderson, & Geske, 1981).

Two major observations emerge from a review of the results of several successful job placement programs which served mildly, moderately, and severely handicapped persons (Greenspan & Schoultz, 1981; Rusch, in press; Sowers, Connis, & Thompson, 1979; Wehman, 1981; Wehman, Hill, Goodall, Pentecost, Cleveland, & Brooke, 1982).

First, vocational programs for the severely handicapped begin too late in the child's school period. Most programs begin when the student is 14, 15, or 16 years old. In some cases, this leaves less than four years for students with numerous severe handicaps to learn a large number of general and specific work skills. This observation is echoed in a report by the President's Committee on Employment of the Handicapped and Missouri Governor's Committee on Employment of Handicapped (1982).

Second, most school-based vocational programs (part-time or full-time) do not heavily emphasize employment or job placement as a culmination of vocational training experiences. It is usually expected that adult programs will take up this responsibility. Nevertheless, the community service system of adult day programs and vocational rehabilitation for many reasons are unable to follow through adequately on job placement and follow-up (e.g., Bellamy, Sheehan, Horner, & Boles, 1980).

Thus we have been faced more often than not with students who graduate with several years of vocational training which is often incomplete, and with no assistance provided in job placement. This set of events contributes to maintain high unemployment of handicapped individuals. This article, therefore, proposes to discuss guidelines and suggestions for providing employment-oriented vocational education experiences for severely handicapped students throughout the school-age period.

## Time Commitment to Vocational Programs

Decisions must be made as to how much time in a busy school day will be devoted to vocational education experiences. As a general rule of thumb the older the student, the more time may be spent in vocational instruction. For example, at the elementary level less than one hour might be spent on vocational and career awareness experiences. At the middle school level there might be a gradual increase from one to two hours, building up to almost 50% of the day by the time the student is 17 years old. In the final years of school, vocational training and placement can absorb 80% to 90% of the student's day. Lynch (1982, p. 83) essentially made a similar point by emphasizing the need for reduced academic work as the student grows older.

It should be noted, however, that many community, social, and language skills can be taught very nicely in the context of vocational settings. Community skills such as money management, time management, and travel training take on meaning when associated with a real job. Similarly, social interaction greeting skills, picture or gestural communication, and the ability to follow multiple instructions are all viable training targets which have high utility in a job.

The guidelines described above are estimates. Every student's situation will vary depending on such factors as skill level, classroom arrangements, and parent perceptions. The balance of this paper offers suggestions for providing vocational education at different age levels for severely handicapped students.

## Elementary Level

The teacher of primary age severely handicapped children has a responsibility to focus part of the educational program on career and vocationally related activities. This concentration includes not only work with students but also specific interactions with parents and vocational experts within the school. Four guidelines for the elementary level teacher are briefly described below.

Let students sample different types of jobs to which they are likely to have access when they become older. Cleaning tables, emptying trash, washing blackboards, or taking messages to the office are good ways of improving career awareness. Professions such as doctor, lawyer, or nurse are impractical and should have less exposure, since this may erroneously distort the perceptions of some students. A major value of this exercise is that students, their parents, and educational personnel can evaluate strengths, weaknesses, and interests in relation to different jobs and help posture the child for intense work in a more concentrated career cluster as he or she grows older.

Introduce such concepts as work, money, and employer relationships into the classroom. Students can run errands, empty trash, clean blackboards, and do other jobs not so much for the purpose of specific skill development as for acquiring the general work skills which transcend all types of jobs. The lack of just such broad work skills frequently leads to the termination of employed handicapped workers (Kochany & Keller, 1981).

The teacher needs to talk with the child's parents about the concept of work and its importance. Materials can be shared with parents which emphasize the employment potential of handicapped youth and adults. Interested parents should be encouraged to visit successful work programs both at school and at local adult day programs.

Finally, elementary teachers need to visit senior level and adult programs to carefully observe the types of skills which are most important to the vocational success of severely handicapped students. Communication among teachers at these different levels must take place in order for the elementary level teacher to become sensitive to the curriculum changes which must be put in place in the earlier years. A list of sample prevocational behaviors is provided by Lynch (1982, p. 2) for the elementary through secondary years.

## Middle School Level

Once a severely handicapped child reaches 10 or 11 years of age, three additional areas of vocational education should be emphasized, along with continued communication with parents and senior level programs. Teachers at the middle school level must be aware that the student is a "product" whose later progress in vocational placements is highly dependent on the quality of the program provided at the middle school level.

First, more attention and time must be given to developing general work habits such as neat appearance, being on task at the work station, and responding appropriately to supervisor criticism. These skills were introduced at the primary age level but need to be expanded and practiced more often. General work habits are best taught in the context of specific vocational skills and with systematic instructional techniques (Wehman & Pentecost, 1983; Wehman & McLaughlin, 1980). Related vocational behaviors can also be taught and reinforced in a variety of other curriculum areas and by staff other than teachers. Rusch and Schutz (1982) developed an excellent assessment tool to evaluate this progress.

A focus on learning specific vocational skills which will lead to employability of a marketable trade (e.g., housekeeping) should be emphasized as well. The essential point is that teachers must teach students how to become proficient at a variety of jobs which, depending on the local job market, might include entry level skills in farming, clerical, food service, housekeeping or custodial, or sheltered work such as assembly and sorting. Instructional techniques such as task analysis, forward or backward chaining, shaping, and reinforcement are commonly used techniques to facilitate these skills (Bellamy, Horner, & Inman, 1979; Wehman & McLaughlin, 1980). The purpose is to provide students with a specific repertoire of skills which senior level teachers then build upon.

Toward the latter stages of the intermediate level period, teachers should assist students in identifying a vocational track(s) which can be emphasized in the senior level. For example, a profoundly retarded 13-year old might be advised to spend a significant portion of time learning sheltered work skills which correspond to the requirements of local sheltered facilities. On the other hand, a severely retarded trainable level youth might focus more time on janitorial skills, assuming that the local job market experiences regular turnover in maintenance-related positions.

## Secondary Level

It is at this age level that one can truly assess the success or failure of the vocational experiences provided in the earlier years. More time should be spent on vocational education at the secondary level. At least five additional areas need to be emphasized, as well as continued reinforcement of the activities and suggestions already mentioned. These five areas include:

1. Focus on increasing or improving production rates. The speed at which students work in sheltered workshops or competitive employment situations will directly affect their employability and attractiveness to potential employers. Bellamy, Horner, and Inman (1979) described in detail strategies for accelerating production rates.

2. Focus on improving the quality of job performance. The accuracy and care with which the job is completed will influence the likelihood of being retained on a job, assuming, of course, that work proficiency, work speed, and general work skills are adequate. The quality objectives will be partially affected by the employer's or industry's standards of acceptance. Improving quality of work performance is best accomplished by reinforcing students for progressively fewer errors and helping to arrange a work environment which reduces the likelihood of failure.

3. Focus on building up the student's endurance and stamina. Increasing the number of work hours for the secondary level student over a period of weeks will go a long way toward promoting improved employability in adulthood. During the performance of workshop tasks, the student should be encouraged to stand rather then sit all the time. Nonsheltered employment training should require the student to complete a series of tasks within a job without stopping for more than a brief period.

4. Focus on providing vocational experiences in natural or real life environments. All too often, secondary level students receive vocational (and other educational) services in highly protected classroom and center environments. While it may be administratively understandable, this service delivery pattern leads to the student's inability to generalize vocational skills learned at the school or to relate to and interact with nonhandicapped individuals in the natural work place. These critical deficits are usually best overcome by providing some

training in natural work environments outside the classroom (Wehman & Hill, 1982) and/or by actually placing the student into a part-time or full-time job and then providing job-site training in a supported work model (Kraus & MacEachron, 1982; Wehman, 1981).

5. When placement is not possible, do not let students graduate without a transition plan into an adult vocational services program which will provide necessary followthrough. A transition plan should list options available for the student in the community, identify an advocate (i.e., rehabilitation counselor or case manager), and describe strategies for ensuring a smooth change from school to adult-based programs (Wilcox & Bellamy, 1982).

## The Role of Related Services Personnel

Staff in the related services can also play an important role in improving the employability of severely handicapped youth. For example, communication specialists can emphasize work-related content in language training. Language objectives should reflect competencies required for success in senior level and adult vocational programs. In many cases it will be necessary to create portable and efficient means of manual communication; that is, ways of minimizing reliance on verbal skills.

Motor specialists such as occupational therapists, perceptual-motor experts, and adaptive physical education personnel can also help by focusing on activities which lead to strength, stamina, and endurance. Fine motor content should be selected which is, as much as possible, vocationally functional and directly related to job proficiency.

## The Role of Administrative Personnel

Few of these activities and guidelines can be adequately implemented without the support of appropriate central office staff, the building principal, and often the assistant principal. The influence of administrators in the following areas is essential to implementation of a vocational program across all school ages:

1. Provide necessary space, supplies, and equipment for training.
2. Provide faculty with necessary technical assistance and exposure to successful vocational models for severely handicapped students.
3. Provide necessary support for helping faculty change their roles so as to spend more time on community-based vocational instruction and placement.
4. Provide administrative support with professionals within the school system and community at large to facilitate training and placement.
5. Help faculty keep a careful focus on the general objectives for each class level.
6. Help faculty counsel parents on accepting work as a viable goal for the child.
7. Provide for insurance and other liability-related matters where necessary.
8. Help faculty make transportation arrangements.

The administrative tone set in the school will affect the success of the program. Only the administrators can evaluate the entire program, including the cross-section of vocational activities, the amount of time being devoted to these activities, and overall teacher/parent reaction. A commitment to employment-oriented vocational experiences must be operative in order to implement and maintain a viable program.

## Summary

Longitudinal programming from 5 to 21 years of age is a major theme of an employment oriented approach to vocational education for severely handicapped students. Teachers at each subsequent age level are dependent on the efforts of the previous teachers if the student is to be, in fact, marketable or employable in the sheltered or nonsheltered business community.

Educators of the severely handicapped must expend much greater effort to learn how local businesses function and the criteria they consider crucial for hiring and retention. Only when we focus more on identifying the labor force needs of business and industry and subsequently translate these needs into curricula at all age levels will we begin to substantially improve the employability of many more severely handicapped individuals.

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# COMMUNITY INTEGRATION OF YOUNG ADULTS WITH MENTAL RETARDATION: TRANSITION FROM SCHOOL TO ADULTHOOD

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## Abstract

The present study assessed the degree of community integration of 300 young adults in Virginia who have participated in special education programs for students labeled mentally retarded. Surveys were administered by trained interviewers on variables related to basic self-care, home management, community usage, use of free time, recreational/leisure activities, and self-satisfaction. Results indicated that the individuals surveyed were generally satisfied with their present situation, and most displayed some degree of competence in the area of independent living skills. Implications of the results and the necessity for future research are briefly discussed.

# Community Integration of Young Adults With Mental Retardation: Transition from School to Adulthood

Assessing the degree of community integration of persons with mental retardation living in local communities is a difficult and complex task (Lakin, Bruininks, & Sigford, 1981). Many previous studies have taken a limited view of successful integration, considering only whether or not an individual is able to remain in the community and not focusing on factors that indicate the *quality* of a person's life. Despite a shortage of reliable information, it is obvious that living in the community with relatives or in an alternative living arrangement does not guarantee a person with mental retardation a normal lifestyle (Bercovici, 1981). An individual's independent living and social activities should both be considered when evaluating the total community integration of persons with mental retardation.

Independent living skills refer to those activities that decrease an individual's dependence upon other people (e.g., grooming, cooking, and home management skills) as well as activities that allow the individual to use generic community services (e.g., mobility and shopping skills) (Vogelsberg, Williams, & Bellamy, 1982). Independent living skills identified as critical for successful community integration have included basic self-care, home management, independent mobility and use of community facilities (Heal, Sigelman, & Switzky, 1978; Schalock, Harper, & Carver, 1981). Despite the importance of these skills, relatively little data presently exist that document the effectiveness of current attempts to equip individuals with mental retardation with independent living skills (Schalock, 1983).

It is obvious that there is a vast difference between *living* in a community and being socially *integrated* into that community. Unfortunately, many individuals with mental retardation are living in local community settings, yet are socially isolated within their homes and excluded from participation in the mainstream of community life (Bercovici, 1981). Interaction with other community members and recreational activities should be examined to determine the social integration of persons with mental retardation.

The importance of interpersonal relationships in the community integration of persons with mental retardation has been widely explored (Reiter & Levi, 1980; Schalock, Harper, & Genung, 1981). In a comparison with mildly and moderately mentally retarded individuals, Landesman-Dwyer and Sulzbacher (1981) found that persons with severe handicaps spent more idle time within their residence, interacted less with others, and spent much less time outside the residence. When individuals leave the residence, they rarely do so unaccompanied (Scheerenberger & Felsenthal, 1977). These findings corroborate the results of earlier studies (Baker, Seltzer, & Seltzer, 1977; Gollay, Freedman, Wyngaarden, & Kurtz, 1978) which found that individuals living in community residential facilities generally did not develop friendships outside the facility, did not visit others in the community, and rarely dated.

Engaging in active, community-based recreation activities is another powerful indicator of social integration. Current evidence (Salzberg & Langford, 1981; Wehman, Schleien, & Kiernan, 1980) indicates that many individuals spend leisure time inside their homes rather than participating in community-oriented recreation/leisure activities. Gollay and her colleagues (1978) found that individuals engaged primarily in passive recreation activities and that group activities (clubs or organizations) were selected least often. Community recreation activities almost always occurred in programs designed exclusively for disabled individuals.

Many professionals currently recommend deriving the content of community integration training programs from an empirical analysis of the domestic, community, and recreational skills required for success in post-school environments (Snell, 1983; Wilcox & Bellamy, 1982). At the same time, little information presently exists to document the independent living and social activities of individuals who have recently left public school special education programs for persons with mental retardation. The purpose of this study was to investigate the community integration of a group of individuals with mental retardation who had left public school programs during a selected period of time. Specific factors to be investigated included basic self-care, home management, and community usage skills, use of free time and recreational/leisure activities, and self-satisfaction. The data presented are a part of a larger study which also investigated the vocational adjustment of persons with mental retardation.

## Method

### Sample

Young adults who have been served in public school special education programs for individuals labeled mildly, moderately, or severely mentally retarded were selected for investigation. Survey participants were individuals from four communities in Virginia who had left school from 1979 through 1983. The communities surveyed included a highly urban inner city setting, a large suburban area, a rural/suburban area, and a very rural area. This final area revealed so few special education students that four small school systems were included for investigation.

A professional in each of the four locations who was familiar with the schools and adult services in the area was identified to conduct survey interviews. Each professional was trained and paid to collect data derived from a 60-item structured interview. Through communication with the participating school districts a list of 444 individuals was generated who had recently exited special education programs for students with mental retardation. Actual names of participants never appeared on any of the collected surveys.

### Instrument

A 60-item survey was generated which contained 35 items addressing independent living and social integration activities. Questions were worded in either a forced choice yes-no format or a multiple choice format in order to facilitate the length of time required for each interview. The items included were intended to determine the domestic, community, recreational, and social activities in which an individual participated. The focus of the items was not on whether the individual possessed the ability to perform the activities included in the survey, but rather if the individual engaged in these activities as a part of his or her regular routine.

### Field-Testing

Once the survey was constructed, 15 mental retardation professionals in academic and direct service circles in Virginia were consulted to provide input and feedback. Once this information had been gleaned and integrated where possible, several mental retardation graduate students were trained and asked to give the survey to parents of individuals with mild, moderate, and severe mental retardation. Survey modifications were again made from this information.

### Interviews

All four interviewers held Bachelors or Masters degrees in the human services and were working as special education teachers, vocational placement specialists, or visiting teachers. All had lived and worked in their respective areas for at least five consecutive years. The interviewers were brought to a central location for six hours of training. After training, interviewers completed the surveys between December, 1983 and May, 1984.

## Results

A total of exactly 300 individuals were contacted and responded to the survey. This total was divided into 30 percent urban, 31 percent suburban, and 38 percent rural/suburban residents. At the time of the interviews 86.4 percent of the individuals surveyed lived at home with their natural family, and 7.8 percent lived independently. Less than two percent lived in any type of community-based alternative living arrangement.

Table 1 contains a breakdown of selected demographic data that profile key features of the group of individuals surveyed. As can be seen, two-thirds of the respondents were mothers. Males accounted for 57.3 percent of the individuals surveyed, and Blacks and Caucasians each comprised 49 percent of the sample. Individuals ranged in age from 17-24, with 37 percent being either 21 or 22 years of age. Sixty percent of the individuals had received services in public school classes for students with mild mental retardation and 40 percent in regular or special school classes for students with moderate and severe mental retardation.

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Insert Table 1 about here

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## Independent Living

Table 2 summarizes the independent living activities of the entire sample. Over 90 percent of the individuals independently completed all basic self-care tasks (dressing, eating, toileting, bathing, and grooming). A majority of individuals participated in a variety of home management activities. Of those surveyed, 74.6 percent participated in cooking meals and/or snacks for themselves, 43.1 percent did their laundry, 23.8 percent sewed or mended their clothes, 79.9 cleaned their rooms, and 67.6 percent completed assigned household chores.

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Insert Table 2 about here

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Participants displayed some degree of independent mobility and usage of community facilities. Seventy-five percent of those surveyed walked about their communities, 39 percent rode bicycles, 20.3 percent drove a car, and 25 percent used public transportation. Slightly more than half (51.8 percent) of the individuals bought clothes for themselves. Retail stores were frequented by 65.6 percent of the individuals, 46.5 percent utilized restaurants, 27.9 percent used the post office, and 25.4 percent used a bank. Over three-fourths of those surveyed used money to make purchases independently. Only 51.8 percent reported making change on their own. Banking activities were displayed by a smaller number of persons, with 15.4 percent writing checks, 10.4 percent balancing checkbooks, and 17.1 percent possessing savings accounts.

## Social Integration

A majority of the social activities and interpersonal relationshps reported by the respondents focused on passively oriented activities conducted within their own homes. As indicated in Table 3, a majority of individuals (59.7 percent) preferred spending free time with their families, 22.3 percent with friends, and 3.3 percent alone. One of every five individuals (20.3 percent) spent time only with their families. However, 59.7 percent of the individuals reported spending the vast majority of their free time with persons with no identified disabilities. A number of individuals reported some amount of time (more than one hour per week) engaging in social activities outside their homes, with 68.8 percent spending time in homes of friends, 27.6 percent in outdoor recreation facilities, and 28.9 percent in indoor recreation activities.

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Insert Table 3 about here
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The individuals surveyed participated in a wide variety of recreational activities. Nearly all individuals (92.2 percent) reported watching television regularly, 89.9 percent listening to records and tapes, 26.8 percent playing card games, 18.8 percent playing table games, 8.4 percent making crafts, and 15.4

percent playing videogames. In contrast, considerably fewer individuals participated in sports-related activities. Less than a fourth of all those surveyed participated in activities such as jogging, swimming, cycling, bowling, basketball, or football. A greater number of individuals reported engaging in more passively oriented leisure activities, with 38.6 percent attending sporting events and 43.6 percent attending movies regularly. The area of recreational activities least frequently reported by respondents was that of membership and participation in social organizations or clubs. Only 18.2 percent reported participating in church activities such as chorus or clubs, and no more than three percent of the individuals participated in a YMCA/YWCA scouting program or attended an adult education or exercise class.

The survey also attempted to assess the individuals' current satisfaction with their present situation and identify the significant problems faced by survey participants. Data summarizing these results are contained in Table 4. Almost three-fourths of the individuals were reported as being very satisfied or somewhat satisfied with their lives. Only 13.9 percent were reported being somewhat dissatisfied and 3.4 percent very dissatisfied with their lives. A wide variety of problems were reported by the respondents. The most frequently reported problems included lack of work skills (29.3 percent of the individuals), transportation problems (23.9 percent), and lack of money (22.2 percent). Other less frequently cited problems included caring for children (17 percent), lack of leisure activities (16.1 percent), making friends (13.1 percent), inappropriate behavior (12.1 percent) and health problems (10.1 percent).

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Insert Table 4 about here

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## Discussion

The results of this study present a mixed picture of the community integration of young adults who have recently exited from special education programs for persons with mental retardation. The data presented should not be construed as reflecting the status of all adults with mental retardation in Virginia. The lack of a comprehensive, representative sample, the reliance upon parental respondents, and the collection of data within only four specific locations prevents generalized conclusions from being drawn. Results obtained are undoubtably affected by the training provided in public school programs and the level of adult services available in the participating communities. However, the sample size of 300 is relatively large, and the use of trained interviewers appeared to increase the reliability of the data. Given the drawbacks in study design, a few significant trends emerged which may provide a basis for future investigations.

1. Almost all of the individuals investigated demonstrated some degree of competence in independent living skills. Nearly all possess basic self-care skills, most participate in home management activities, and many possess some degree of independent mobility within their local community. Some individuals make significant use of community facilities, although environments such as restaurants, post offices and banks are frequented by a relatively small number of individuals.

2. The individuals' participation in social activities reflected an emphasis on passively oriented activities conducted within their own homes. Well over half the individuals studied spend the vast majority of their free time with family members and 20 percent interact exclusively with members of their own family. The majority of recreational interests cited by respondents were passive, home-based activities. Relatively few individuals indicated participation in active, sports-related activities, and very few participated in any type of social organization or club.

3. Despite the lack of social interaction with other members of the

community, the individuals surveyed appear quite satisfied with their current lifestyle. Only 17 percent of the individuals expressed any degree of dissatisfaction with their current situation. However, a sizeable number of individuals reported significant problems which presently inhibit their community integration. Lack of work skills, transportation, and lack of money were cited as problems by more than 20 percent of those surveyed.

The design and implementation of effective community integration training programs for persons with mental retardation presents a challenge to professionals in public schools and adult service programs. Successful community integration requires individuals to be independent within their homes and communities and to be socially integrated into all facets of community life. Although the majority of individuals surveyed engage in independent living activities and appear satisfied with their lives, many continue to be socially isolated in their homes and fail to engage in active, structured recreational or social activities. Further investigation is needed to determine the effects of factors such as type of school program, employment status, and level of retardation on community integration. Complete and accurate information on each of these factors is required to enable professionals to design training programs that maximize the community integration of individuals with mental retardation.

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## Table 1

## Summary of Demographic Data

| | |
|---|---|
| Respondent:[1] | 67% mothers / 12% fathers / 7% clients |
| Sex: | 57.3% male / 42.7% female |
| Age | 21% - 17-19 yrs. old / 17% - 22 yrs. old<br>12% - 20 yrs. old / 15% - 23 yrs. old<br>20% - 21 yrs. old |
| Race: | 49% Black / 49% Caucasion |
| Home Location: | 38% - Rural/Suburban<br>30% - Urban<br>31% - Suburban |
| Type of School Program: | 60% - Mild Mental Retardation Classes in Regular School<br>24% - Trainable or Severe/Profound Mental Retardation Classes in Regular School<br>16% - Moderate or Severe/Profound Retardation in Special School |
| Employment Status: | 29% - Full-time employed<br>14% - Part-time employed<br>57% - Unemployed |
| Residence: | 86.4% - Natural Family<br>7.8% - Independent Residence<br>2.0% - Alternative Living Arrangement<br>3.8% - Other |

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[1] Total N=300

## Table 2

## Summary of Independent Living Activities

| Activity Area | Percentage of Individuals Engaging in the Activity |
|---|---|
| **Independent Living** | |
| Basic Self Care: | 93% Independent Dressing |
| | 97.3% Independent Eating |
| | 95.7% Independent Toileting |
| | 91.7% Independent Bathing/Grooming |
| Home Management: | 74.6% Preparing meals/snacks |
| | 43.1% Do their own laundry |
| | 23.8% Sew or mend clothes |
| | 79.9% Clean own room |
| | 67.6% Complete household chores |
| Mobility: | 75% Walk about community |
| | 39% Ride bicycle |
| | 20.3% Drive a car |
| | 25.9% Use public transportation |
| Utilize Community Facilities: | 65.6% Retail stores |
| | 46.3% Restaurants |
| | 27.9% Post Offices |
| | 25.4% Banks |
| Money Usage: | 77.5% Use money to make purchases |
| | 51.8% Make change |
| | 15.4% Write checks |
| | 17.1% Savings account |
| | 10.4% Balance checkbook |

## Table 3

### Summary of Social Integration Activities

| Activity Area | Percentage of Individuals Engaging in the Activity |
|---|---|
| **Social Integration** | |
| Individuals with whom free time is most frequently spent: | 59.7% Family |
| | 22.3% Friends |
| | 3.3% Alone |
| | 1.0% In Public |
| Social activities outside the home: | 68% In homes of friends |
| | 27.6% Outdoor recreation activities |
| | 28.9% Indoor recreation activities |
| Recreation Activities: | 92.2% Watch television |
| | 89.9% Listen to records or tapes |
| | 26.8% Play card games |
| | 18.8% Play table games |
| | 8.4% Make crafts |
| | 15.4% Play videogames |
| Sports: | 14.1% Jogging |
| | 22.8% Swimming |
| | 23.2% Cycling |
| | 18.9% Bowling |
| | 6.4% Basketball |
| | 2.7% Football |
| Events Attended Regularly: | 38.6% Sports events |
| | 12.4% Concerts and plays |
| | 43.6% Movies |
| | 14.8% Fairs and festivals |
| | 3.7% Dances |
| Social Organizations and Clubs: | 18.2% Church-related activities |
| | 17% YMCA/YWCA |
| | 2.4% Scouting |
| | 2.3% Exercise Class |
| | 3.0% Adult Education Class |

## Table 4

## Summary of Personal Satisfaction With Present Situation

| Area | Percentage of Individuals |
|---|---|
| Satisfaction with Present Situation: | 36.5% Very Satisfied |
| | 46.3% Somewhat Satisfied |
| | 13.9% Somewhat Dissatisfied |
| | 3.4% Very Dissatisfied |
| Major Identified Problems: | 10.1% Health Problems |
| | 12.1% Inappropriate Behavior |
| | 23.9% Transportation |
| | 13.1% Making Friends |
| | 22.2% Lack of Money |
| | 29.3% Lack of Work Skills |
| | 16.1% Lack of Leisure Activities |
| | 16.1% Caring for Children |

# TRANSITION FROM SCHOOL TO WORK FOR INDIVIDUALS WITH SEVERE HANDICAPS: A FOLLOW-UP STUDY

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# Abstract

The present study assessed the employment status of 117 transition age young adults with moderate, severe, or profound mental retardation in Virginia. Data were collected by trained interviewers on variables related to unemployment level, wages earned, types of jobs, assistance available in job identification, et. The findings of this study indicated high unemployment rates of almost 88% with only 14 of the 117 persons holding real jobs in nonsheltered work environments. Wage accumulation was very limited. Implications of these results and other similar studies for future programming was then discussed.

# Transition From School to Work for Individuals With Severe Handicaps: A Follow-Up Study

It has been almost a decade since children with severe handicaps were mandated by the federal government to receive a free publicly funded education. Much progress has been made during this time period as more has been learned about the most effective teaching techniques (Mulligan, Lacy, & Brown, 1982; Sailor, Brown, & Wilcox, 1982), the best approaches to curriculum (Snell, 1983; Wilcox, & Bellamy, 1982; Wehman, Bates, & Renzaglia, in press) and the most desirable service delivery arrangements (Certo, Haring, & York, 1983). There are virtually no curriculum areas which have not received some attention in the professional literature.

As children with severe handicaps finish school and become young adults, the question increasingly becomes: what will happen to them after they leave school? This question is being asked by the U. S. Dept. of Education (Will, 1984) and also the U. S. Department of Health and Human Services which, through the auspices of the Administration on Developmental Disabilities, commissioned a study by the Inspector General (April 13, 1984). The findings of this study suggest that well over 90,000 developmentally disabled students will leave school each year; in the Special Education Programs Office of the U. S. Department of Education, Will (1984) finds 250,000 handicapped youth will be leaving schools. While there are no definitive studies which at this point address the exact number of special education students graduating, we do know that the numbers are large and growing.

Congress has not been oblivious to this problem. In 1983 through the Education Amendments (P.L. 98-199) funds were set to establish secondary education and transition services in research and demonstration. In a statement from this legislation Congress says:

> "...the Subcommittee (on the Handicapped) recognizes the overwhelming paucity of effective programming for these handicapped youth, which eventually accounts for unnecessarily large numbers of handicapped adults who become unemployed and therefore dependent on society. These youth historically have not been adequately prepared for the changes and demands of life after high school. In addition, few, if any, are able to access or appropriately use traditional transitional services. Few services have been designed to assist handicapped young people in their efforts to enter the labor force or attain their goals of becoming self-sufficient adults, and contributing members to our society." (Section 626, P.L. 98-199).

A review of the literature, not surprisingly, does not turn up any published studies which specifically report what is happening to severely handicapped students the years immediately following school. Hasazi and her associates (1982) report an excellent follow-up study of all special education graduates in Vermont while Mithaug and Horiuchi (1983) have completed a similar comprehensive study in Colorado. Both of these studies suggest unemployment rates of 46 percent and 31 percent respectively with the Colorado study showing an unemployment rate almost twice as much if part-time jobs are omitted. The unemployment rate in the Hasazi study for those students with severe handicaps was much higher.

Brown and his colleagues did a case by case follow-up of severely handicapped graduates of the Madison, Wisconsin public schools in a 1971-1978 time period and then again from 1979-1982 (Brown, Ford, Nisbet, Shiraga, VanDeventer, Sweet, & Loomis, in press). Their findings indicated that in the first time frame 53 severely handicapped students graduated and only one worked in competitive employment. The others were found in activity centers, workshops, or at home. These individuals had functioned primarily in a segregated school environment with no community based vocational program. However in January, 1983 a second study showed 27 of 38 graduates were working or volunteering in 25 nonsheltered environments with nine in sheltered environments and two at home. This improvement reflected more intensive vocational training efforts, community based instruction and integrated schools. The only other study specifically related to those with severe handicaps that we are aware of was by Donder (1982) who followed up on students labeled trainable mentally retarded and severely handicapped in a medium sized city in Central Illinois. This study, which was not published, was focused not specifically on employment status but rather parental perceptions of their son or daughter's functioning in domestic, community, recreation and vocational environments. The overwhelming majority of parents reported that their children stayed at home or work in segregated work environments like activity centers or sheltered workshops.

In order to go beyond these initial efforts and to investigate in more depth the employment status of severely handicapped young adults across a larger geographical area after leaving school, we undertook a follow-up study in Virginia. The purpose of this paper is to report the types of employment, employment level, types of services received, income earned, etc. that young adults with severe handicaps receive. The data reported in this paper were part of a larger study which we had conducted.

## Method

### Sample

Individuals labeled trainable, severely, and/or profoundly mentally retarded were selected as the only category of handicapping condition to assess. This was done because most of the previous surveys mixed all handicapping conditions together and we were interested in looking only at those with moderate, severe, or profound mental retardation. Furthermore, as noted above this report was part of a larger study which looked at all levels of mental retardation. Unlike some of the previously reported surveys (Hasazi, et al., 1982), we did not attempt to collect data on every severely retarded individual who left school. Since Virginia is quite a diverse state geographically, it was decided to select urban, suburban, and rural locations to survey.

After consulting recent census figures, four different locations in Virginia were selected. The first was a highly urban inner city setting, the second was a large suburban area, the third was rural and suburban, and the final was very rural with a high poverty level. In only the last setting described did more than one school system participate. In this geographical area so few special education students were identified that four other small systems had to be involved. Within each of the settings, it was determined that all individuals with severe handicaps who had left school from the year of 1979 through 1983 would be contacted.

In each location, a professional was identified who would be familiar with the schools and adult services in the area and who would be the person who would conduct each survey. This mode of data collection was viewed as a means of reducing the problems associated with mail or telephone surveys. Each interviewer was paid and trained how to collect the data. The interviewer was responsible for meeting with appropriate school officials and retrieving the records which showed the names of all retarded individuals, addresses, and phone numbers. These records were only made available after permission had been received through our communication with the schools.

Actual names of participants never appeared on any of the collected surveys since the interviewers were asked to code the surveys and keep the true names in a separate confidential file. A total of 185 names was identified.

## Instrument

A 60-item survey, many of the items with multiple choices, was generated. Of this survey about 25 of the items directly related to employment status. Questions were usually worded in either a forced choice yes-no format or a multiple choice format as briefly as possible in order to facilitate the length of time each interview required.

The instrument was developed after reviewing the Donder (1982), and Hasazi et. al. (1982) surveys which were the best pieces of work we could identify at the time. Some of the items were similar but modified for Virginia. Many of our items, however, were selected in order to determine the individual's current employment status as well as reasons associated with this status. We were less interested in trying to identify whether special education, vocational education, or vocational rehabilitation specifically had made an impact. The employment questions were subdivided into a series of questions for those who reported employment and another series for those who reported no employment.

## Field Testing

Once we had constructed the survey, 15 mental retardation professionals in academic and direct service circles in Virginia were consulted to provide input and feedback. Once this information had been reviewed and integrated where possible, several graduate students in the severely handicapped area were trained and asked to give the survey to parents of individuals with moderate, severe and profound retardation. In this way we could determine what parts of the survey were clumsy, too time consuming, or irrelevant.

Again, from this information we made survey modification.

## Interviewers

The four interviewers were the key to the success of the study. These individuals were all women with Bachelors or Masters degrees in the human services and with job titles of special education teacher, vocational placement specialist, or visiting teacher. They had lived and worked in their respective areas for at least five consecutive years.

All interviewers were brought to our central location for six hours and trained in how to conduct the survey. This procedure was done to minimize distortions in how the interviews were conducted and to maximize uniformity of presentation. Specifically, interviewers were taken through each survey item and each item was discussed. Length of time of interview was expected to be in the 30-45 minute period and parents were typically expected to be respondents. The interviewers were paid in two installments, when 50 percent of the interviews were completed and then at the end. A total of five months were anticipated for completion of the interviews (December, 1983-May, 1984).

Interviewers were monitored on a weekly basis. A graduate assistant called each interviewer once a week at a predetermined time to assess whether the previously agreed amount of interviews had been completed. Periodically the completed surveys were mailed to us for on-going coding of results and storage of information. Interviewers were given feedback on what the results in their location seemed to show.

## Results

A total of 117 parents agreed to be interviewed for this survey. This total was divided into 30 percent urban, 31 percent suburban, and 38 percent rural-suburban, a fairly equal distribution. The interviewers did an excellent job in completing the interviews which turned out to be quite lengthy, not as much in the actual interview but rather in setting up the necessary appointments. All of the respondents were natural parents. There was no way to determine the specific measured intellectual level of the persons with severe handicaps since individuals were classified only as being in trainable mentally retarded classes or severely/profoundly handicapped classes. A total of 72 students or 62 percent of the students attended segregated schools while the other 38 percent of the students had gone to integrated schools.

## Employment Level and Income

Table 1 summarizes key employment and income level data. The employment level reported by the 117 respondents indicated that 25 of the individuals had jobs for an employment level of 21.6%. Eleven of these jobs were in sheltered workshops and 14 were in part or full time paid competitive employment. Two of the persons earned between $500 and $700 per month and five between $201 and $500. The other persons reported earning less than $100 per month. Over 86 percent of the total persons surveyed (117) indicate they have not earned more than $1000 since leaving school. The types of jobs, other than sheltered work, is janitorial, food service, and farm labor.

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Insert Table 1 About Here

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## Fringe Benefits

As might be expected, fringe benefits were not very good. A total of 12 percent of the respondents indicated that sick time benefits were available with 24 percent receiving vacation time. Twelve percent received an insurance plan and eight percent received free meals. These percentages are on the basis of the 25 people who reported employment.

## Assistance in Finding Job

Six out of the 25 persons reporting employment found their job with the help of a rehabilitation counselor while another five individuals received assistance from the school counselors. A total of 10 persons had help from a parent, relative, or found the job on their own. Another 20 percent or five persons located their job with the help of a special outside job placement program. Table 2 summarizes these data.

Insert Table 2 About Here

## Reasons Given for Unemployment

The reason given for unemployment by the largest number of respondents (55%) was that there were no jobs in the area. This was followed by 14 percent who indicate that there was no one to help them get a job and another 16 percent who say there were no vocational job training services available. A total of 15 say that transportation is a barrier to employment with 8.7% indicating they don't want to give up Social Security Disability Income benefits. Table 3 reflects all of the reasons given.

Insert Table 3 About Here

## Amount of Vocational Services Received

A total of 93 out of 117 persons or 79.5 percent indicate no rehabilitation services have been received while 17.9 percent indicate they have received occasional visits and 1.7 percent say they have received frequent job placement services. Similarly, 70 percent say they have never had local mental retardation services while 23 percent indicate participation in adult day programs for mainly nonvocational services. Over 95 percent have never received help from the Virginia Employment Commission.

## Discussion

The results of this study indicate that less than 12 percent or a total of 14 of the 117 individuals with moderate, severe, or profoundly mental retardation in several geographical parts of Virginia are employed in real jobs. Eleven people work in sheltered workshops. These figures are consistent with another study just completed in Virginia of parent attitudes toward employment of their mentally retarded sons and daughters (Hill, Seyfarth, Orelove, Wehman, & Banks, 1984). In this study, which was not limited to transition age students or only to those with severe handicaps, one of the items which was asked of the 263 participating parents was if their son or daughter worked competitively. Only 13 or 5% responded affirmatively. An overall unemployment rate of 80% is also similar to the findings of Hasazi and her associates (1982) and the Donder (1980) study.

There are not many positive conclusions which can be drawn from the employment and income level reported by the parents of these individuals with severe handicaps. This survey was taken during a time period (December, 1983 - May, 1984) when the Virginia and national economy was in a pronounced expansion with thousands of new jobs being created. Yet few respondents indicated that their children had cumulatively earned more than $1000 since leaving school. The unemployment level in this state and in three of the four locations surveyed was less than 5.5 percent, a very low level. Hence the very high level of response (55%) suggesting there were no jobs in the area as a principle reason for unemployment seems somewhat difficult to understand.

Those who were able to find employment reflected a need for help from professional sources with almost two-thirds coming from counselors and job programs. This finding differs markedly from a study of individuals with less severe handicaps where independent job seeking, parents and friends played a much larger role (Wehman, Kregel, & Seyfarth, in press). It is notable, however, that almost 25 percent or six of those employed did get help from parents, friends, and relatives. Hasazi and associates (1982) found this to be a critically important network for job placements.

While it is very difficult to draw specific conclusions from these data as to the reasons for unemployment, it is clear that Social Security concerns, not wanting to work, and having to stay at home, three commonly cited reasons for unemployment were not reported significantly by these respondents. Almost half (46%) indicated that if they had vocational training, job placement services, and transportation help they would be willing to be employed. As noted earlier, the 55% figure of no jobs available seems questionable. One might speculate that with skilled job placement personnel available to locate jobs that this figure would shrink dramatically.

The data in this report reflect school programs and adult services which occurred in the past decade. A number of the respondents did not have many years of special education. Most have not received functional curriculum and community based vocational training. There have been few coordinated efforts at transition (Wehman, Kregel, & Barcus, in press). Similarly, adult services have been singularly focused on segregated day programs which provide for little in the way of decent remuneration or integrated work opportunities. Hence the employment choices upon graduation have been severely limited.

The dismal employment and wage accumulation level reported by the severely handicapped respondents in this study serve as a baseline for us to assess past services and as a challenge to markedly improve vocational programming. The published literature available today (e.g., Bellamy, Horner, & Inman, 1979; Melia, 1984; Rusch, in press; Wehman, 1981; Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982) would seem to suggest that persons with severe handicaps have far greater employment capabilities. However, most of these reports are research and demonstration and have not filtered substantially into local school systems and community service programs. Therefore, the challenge is greater than ever before to encourage service delivery systems to improve their operation and leverage existing dollars in the system for more services of higher quality. More demonstrations are undoubtedly required because too many professionals in key positions such as the special education teacher and rehabilitation counselor are skeptical of the employment abilities of persons with severe handicaps. The special education teacher can set the tone with parents and design an appropriate functional program. The rehabilitation counselor can serve as a broker to utilize funds for purchasing specialized services to place and maintain a client into a job (Hill, Hill, Wehman, Revell, Dickerson, & Noble, 1985).

In closing, this report is the first study to examine the employment status of young adults with severe handicaps on a statewide basis. The results were not positive but present an initial level from which to assess improved programmatic efforts upon. Other studies in different states are needed for further documentation of the current employment situation of transition age youth with severe handicaps.

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## Table 1

## Employment Level and Income of Severely Handicapped Young Adults (N=117)

| | |
|---|---|
| Unemployed (92) | 79.1% |
| Sheltered Employment (11) | 9% |
| Part or Full Time Paid Employment (14) | 11.9% |

| | |
|---|---|
| 8% (2) | $501-700/Month |
| 21% (6) | $201-$500/Month |
| 54% (13) | $51-$100/Month |
| 17% (4) | $0 - $50/Month |

Table 2

Assistance in Finding Job (N=25)

| | |
|---|---|
| School Guidance Assistance | 24% |
| Rehabilitation Counselor Assistance | 20% |
| Special Job Placement Program | 20% |
| Independently | 12% |
| Parent | 12% |
| Relative | 4% |
| Friend | 8% |

## Table 3

## Reasons Given For Unemploymen
(N=92)

| | |
|---|---|
| No Jobs in Area | 55.4% |
| No One to Help Get Job | 14.1% |
| No One to Provide Vocational Training | 16.3% |
| No Transportation | 15.2% |
| Social Security Disability Concerns | 8.7% |
| Unable to Work | 6.5% |
| Don't Want To Work | 3.3% |
| Needed At Home | 1.1% |

# UNEMPLOYMENT AMONG HANDICAPPED YOUTH: WHAT IS THE ROLE OF THE PUBLIC SCHOOLS?

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# Abstract

The purpose of this paper is to present a supported work approach to employment services which is designed to foster job placement and job retention for handicapped youth. Based upon the repeated success of the supported work model with moderately/severely handicapped young adults, it appears that it is time to apply this model to the job placement of students in public schools. This model suggests some different ways to solve this pressing unemployment problem. Such an undertaking requires extensive changes in the curriculum, service delivery system and administrative arrangements used with secondary programs for students with handicaps. What the implementation problems are in integrating this model into school systems and how they might be solved are discussed.

## Unemployment Among Handicapped Youth: What Is The Role of The Public Schools?

One measure of the effectiveness and success of special education programs is the employability of students who graduate or leave school. Although the vocational outlook for handicapped students is not the only responsibility of special education programs, positive employment outcomes surely must be considered a high priority.

Since unemployment rates of 50% to 75% for handicapped people are quite high (U. S. Commission on Civil Rights, 1983), it would appear that both secondary and adult programs are not working to the extent they need to be. Furthermore, follow-up data of special education graduates in Vermont (Hasazi, Preskill, Gordon, & Collins, 1982), Colorado (Mithaug & Horiuvuci, 1973) and Virginia (Wehman, Kregel, & Zoller, 1984) confirm these high levels of unemployment for students recently leaving special education. In the case of secondary special education programs, the responsibility of providing full employment for students before graduation is rarely assumed by the public schools. Vocational education, rehabilitation, and other similar types of programs often provide direct payments to employers and students as a substitute for unsubsidized employment. The emphasis these programs put on job placement services which stress unsubsidized competitive employment is subject to debate.

A careful evaluation of what might be altered in curriculum, service delivery system or other administrative arrangements that could significantly improve the unemployment problem is overdue. Previous experiences at job placement and competitive employment for handicapped individuals (Rudrud, Ziarnak, Bernstein, & Ferrara, 1984; Rusch & Mithaug, 1980; Wehman, 1981; Wilcox & Bellamy, 1983), suggest that the traditional classroom, work-study, and cooperative education type models need to be reexamined especially in terms of competitive employment outcomes for students prior to graduation. Furthermore, it must be recognized that automatic placement into sheltered workshops and adult activity centers is not necessarily desirable or optimal due to the segregated nature of those placements and poor wages.

Therefore, it is the purpose of this paper to present a supported work approach to employment services which is designed to foster job placement and job retention for handicapped youth. This model suggests some different ways to solve this pressing unemployment problem. Later sections of the paper describe what the implementation problems are in this model and how they might be solved.

## A Supported Work Approach to Overcoming the Unemployment Problem

The principle theme characterizing a supported work model (Wehman & Kregel, 1984) is that competitive job placement is not the only sufficient outcome in a vocational education program, but that job retention is equally important. Furthermore employment must provide for unsubsidized wages from an employer committed to hiring the student. With a supported work approach professional staff are actively involved in all aspects of the student's employment. These aspects are: 1) job placement, 2) job site training upon employment, 3) on-going assessment of student progress, and 4) follow-along of the student and transition into adult services.

### Key Assumptions Underlying Use of a Supported Work Model

The success of any job placement will be influenced by several assumptions. The degree with which these assumptions can be met, will influence how well the placement meets the student's and employer's needs. These assumptions include:

1) The community labor market has been screened or assessed for the type of jobs which appear likely to have vacancies or turnover, and which appear to be within

the capacity of the student(s) which are to be placed.

2) A pre-employment vocational program has provided at least a limited degree of training for students; this training will provide competency in some of the vocational skills which may be required in the target types of jobs and ideally begin at early age in school (Wehman, 1983).

3) An evaluation of student adaptive behaviors, parent/caretaker attitudes, transportation possibilities, etc. has been undertaken with such data available to staff working within the supported work model (Phelps & McCarty, 1984).

If any of the above assumptions are not met, it will not preclude placement. But it will slow down the placement and retention process and be more expensive for staff to implement job site training. Furthermore, completion of these activities should facilitate the transition process into adult programs which might provide placement or follow-along if placement is already made.

## Program Component I: Job Placement

The placement of the student into a job appropriate to his or her abilities is the first major component of the supported work model. The process of job placement involves more than simply finding a job for a student. Major aspects of the job placement process include:

a) matching job needs to student abilities or potential

b) facilitating employer communications with the student

c) facilitating parent or caretaker communications

d) establishing travel arrangements or providing travel training

e) analyzing the job environment to verify all potential obstacles which may arise

There are several key points to highlight about job placement within the supported work model. First, effective placement is predicted on an accurate analysis of work environment requirements. This process has been variously referred to as ecological analysis (Wehman, 1981), top-down curriculum (Brown, Branston-McClean, Baumgart, Vincent, Falvey & Schroeder, 1979), or job analysis (Vandergoot & Worrall, 1979). It is critical that adequate detail be provided in terms of job requirements, characteristics of the work environment, and other features which may influence job retention. This detail will then facilitate the job match, that is, pairing job requirements with student abilities.

The second key point is that job placement can take place with students who do not possess all the necessary work or social skill competencies for immediate job success. The strength of the supported work model is that whoever is making the placement knows that job site help will be available once the placement formally occurs. This is a significant departure from traditional placement approaches which require the student to be quite "job ready".

A third important element is that travel, social security, job interview, and other non-work related factors are actively handled in the job placement process. Within a more traditional placement frame-work it is often accepted that the student or caretaker will handle most of these concerns if a job is made available. With moderately and severely retarded youth job placement would be impossible or highly unlikely without this type of support.

Job placement is frequently done not by a specialist in placement but by a job coordinator or work experience specialist. This job coordinator handles not only placement but all aspects of the supported work process. A virtue of this approach is continuity across all components of the model. On the other hand, a drawback may be having less time to concentrate exclusively on job identification. Our experiences have shown, however, that informal job contacts are quite valuable and that jobs arise from the good relations which job coordinators develop with employers.

## Program Component II: Job Site Training and Advocacy

As noted earlier, on-the-job training is certainly not a new concept. However, in most of the models there is not an active involvement early in the placement from a trained professional staff person. Usually employers are seen as the "trainers" or no specific training is provided but instead brief and infrequent follow-up checks or visits are made after the placement. In short, a major step, i.e. skill training and adjustment to the work environment, is omitted.

Our experiences in placement, as well as communication with others using a supported work approach, strongly indicate that job site training and advocacy is an essential feature of the supported work model. Two major processes are involved: a) behavioral training of skills and b) advocacy on behalf of the student at the job site. There is little research literature on applications of behavioral training to vocational skills in nonsheltered or competitive work environments. Rusch has clearly been the leader in this regard with studies related to acquisition of selected work skills (Schutz, Joste, Rusch, & Lamson, 1980), time-telling (Sowers, Rusch, Connis, & Cummings, 1980), time on-task on job (Rusch, Connis, & Sowers, 1980), reducing inappropriate self-stimulating behaviors (Rusch, Weithers, Menchetti, & Schutz, 1980), as well as selected communication training (Karlan & Rusch, 1982). It is apparent to us that the technology of behavioral training needs to be extended into nonsheltered work environments with individuals who heretofore have been considered poor candidates for competitive employment. We have begun to barely scratch the surface in this area. Applications of reinforcement principles, manipulation of antecedent stimulus conditions, and use of coworkers as peer trainers are all areas which require closer investigation.

Advocacy or promotion of the student is the other principle feature of this component. In some cases, handicapped workers will need less time spent on training and more time spent on orientation to the new job site. Orientation might involve these types of activities on the part of the job coordinator: locating restroom facilities; locating cafeteria and/or vending machines, working out communication problems between student and coworkers; communicating with parents/caretakers about how the job is going; and counseling student on improving general work behaviors (getting to work on time, appropriate appearance, etc.).

## Program Component III: On-going Assessment

A major distinctive feature which differentiates the supported work model end more traditional approaches to job placement is on-going assessment or monitoring of how the student is performing. Typically, a rehabilitation counselor will place a client and then possibly check with employers at some point in the future to see how things are working out. This type of "assessment" is especially insufficient with more severely handicapped youth who may have been terminated or quit by then (Brolin, 1982).

There is a need to immediately gauge the employer's perceptions of the handicapped student's performance once a placement is made. There will usually be two major indicators of performance: supervisor evaluation data and performance data. Although quantifiable data are the most desirable, in some instances verbal feedback to an on-site staff person may be sufficient. The amount of assessment data collected is clearly related to variables such as the ability level of the student, amount of staff available for data collection, and above all the specific need for data to evaluate a certain problem.

## Program Component IV: Follow-Along and Transition

Follow-up is an activity or service which is consistently referred to in the rehabilitation system, yet it is unclear how much follow-up is provided to place clients. For example, the nature of the follow-up in terms of frequency of employer contact, communication with clients, and re-placement into an alternative job are all variables which influence the quality of placement.

In one of the few papers which address the quality of follow-up issue (Hill, Cleveland, Pendleton, and Wehman 1982) list regular on-site visits to employers, phone calls, periodic review of supervisor evaluation, client progress reports, and parent evaluations as ways in which to promote retention. Ultimately, this component of the supported work model may be the most critical since handicapped workers are often immediately at risk of losing their jobs in competitive environments unless some type of retention plan is devised.

As a student nears the age or competence level at which graduation is appropriate, then a transition plan must be put into effect. Such a transition plan should indicate which adult service provider(s) will pick up the follow-along and retention aspect of the individual's employment status. This transfer of responsibility is crucial to providing a continuity of services.

## Supported Work in the Public Schools: Logistical Considerations

To date most public school systems have not put into practice the above described employment model of job placement. Obviously, there are significant difficulties in adopting this type of vocational service delivery arrangment, ranging from transportation concerns to a broader philosophical question of just how much responsibility the schools hold for unsubsidized competitive placement and retention of handicapped students. Nonhandicapped students rarely receive this type of specialized service. Yet serious questions can be raised about the viability of longitudinal and intensive special education programs which fail to provide the same attention to a meaningful employment outcome. It is our position that the schools must take a more aggressive role in facilitating employment. In the sections which follow we present what some of these logistical problems are for implementation and possible strategies for managing the problems.

## Administrative Organization

Programs within public schools to help handicapped youth are usually a network of disciplines established to meet the various educational needs of handicapped students. Generally each discipline such as vocational education, special education, occupational therapy, etc. is mandated to provide specific services. Often these disciplines experience difficulty in providing their service without infringing on the services provided by others. Many times communication between disciplines is difficult to execute. In addition, programmatic decisions for the disabled lie in the hands of persons far removed from day to day instruction. Often decisions to implement program changes such as community based training and job placement are based on administrative convenience rather than on the needs of the students. The result is a fragmentation of service delivery. Each discipline frequency implements instructional objectives in isolation. The individual education plan of each student is fragmented with no longitudinal goal such as employment.

Intraagency coordination of services is a critical first step in providing appropriate services. The utilization of a teaming approach which systematically combines the thinking of various school personnel to develop comprehensive longitudinal individualized programs is necessary. Leadership and organizational roles need to be designated for the efficient administration of teamings. Major tasks of teaming include gathering comprehensive information about a student, analyzing and synthesizing these findings into goals and objectives and ultimately designing a longitudinal educational plan. Teamings can result in the fullest and most efficient utilization of all school resources available.

Obviously other resources in the community should be utilized. Unfortunately, many special education administrators are not fully aware of what services are available to students upon graduation. Tragically, many graduates leave school with no idea of where or how to obtain services. They join the ranks of the unemployed and continue to be a liability to the community rather than a contributor to the tax base. Awareness of where graduates go upon completion of public school programs has direct bearing on curricular content and service delivery strategies of the programs. Knowledge of what services are available in the community; how these services are provided; who is eligible; how many individuals can be served; and what happens to individuals not included in the services; are critical in the management of educational programs for the disabled. Establishment of formal relationships between public school systems and post school service providers is imperative. These agencies should identify a contact person within each system. Information exchange must occur to identify the legislative mandates, types of services provided, eligibility requirements and individualized planning procedures of each agency. Intensive staff development to enable administrators and direct service personnel to develop an understanding of the contributions and limitations of other agencies should be conducted. This should result in a restructuring of overall service delivery to eliminate duplication of services and ensure that options are available to meet the service needs of disabled individuals. The final result is involvement of appropriate agencies in joint planning activities in order to ensure appropriate service delivery to the disabled citizens within the community.

### Community References Training

Vocational education programs frequently are not based on positions currently available in the community. It is common to find programs designed around materials readily available to the program. Often this includes the use of commercially available curriculums. Thus it is common to see horticulture, furniture refinishing and bench work activities. Programs will train individuals on the operation of a drill press, to sort and collate items or to produce craft items. An assumption is made that the handicapped individuals will adjust, function appropriately, and transfer trained skills to new environments with minimal assistance.

It is well documented that this can not be assumed with handicapped individuals (cf. Wehman & Hill, 1982). Training activities must be designed to prepare persons for vocational opportunities that are available in the local community. To ensure this outcome, school personnel must continuously assess available employment and analyze the specific skills required for successful performance.

It is generally accepted that in order to prepare persons for life and work in the nonhandicapped world, it is necessary to supply firsthand exposure to the expectations of the real world. Therefore, it is imperative that training occur in integrated settings. Emphasis is placed on training occurring as much as possible in integrated settings, not in isolated facilities for the handicapped. The effective vocational training program also includes regular exposure to natural work settings. The students should train and work in the community whenever possible. This exposes them to community and work expectations. In addition, future employers and coworkers are exposed to their potential as reliable employees.

## Business Needs

The public schools contact with the business community needs to continue to improve and expand. The business community is growing increasingly concerned about the availability of appropriately trained individuals. Many business people have expressed concerns that they have to train most employees. This training is an expensive proposition for businesses.

More vocational education programs need to be directed at the needs of the local businesses. One important aspect of a supported work approach is that a work experience specialist will be in the field all the time working with students and employers. This is an excellent way to learn what business needs truly are.

Vocational programs should actively seek input from the business community. The establishment of business advisory council will be helpful to formalize relationships between the schools and the business community.

## Transportation

Transportation is a critical issue which has a profound effect on the success of supported work programs. Financing transportation for community-based instruction can be a large barrier, but does not have to be. Administrators should look at how they handle transportation for nonhandicapped students participating in similar vocational programs. The same options utilized with the nonhandicapped students should be available to handicapped students.

In many communities, public transportation options (city bus system, taxi cabs) are available. Walking in some instances is another viable alternative. Both of these options should be encouraged because of their long term availability. If an individual is unable to get to work they are unemployable. By instilling the above skills, the individual increased the potential of retaining their job.

Unfortunately, not all programs have access to public transportation or are located within walking distance to potential jobs. In these situations, teachers can be utilized for initial transportation to the work site. Efforts can then be exerted to get the individual worker into a car pool. They will have to pay for this option, but this is a reality they must deal with now and in the future to remain employed. In other instances, parents or volunteers can provide transportation although this is not the best solution. The use of public school vehicles/teachers/family cars should only be used if normal community transportation options are not available.

## Liability

A related obstacle to implementing employment programs is liability. School systems are skeptical of allowing training in the community due to the question of who is responsible if an individual (student, teacher) is injured. The initial administrative response is to deny community training on the premise that there are too many risks.

School systems have teacher liability insurance, however, this insurance usually covers instructional activities. These policies can provide effective reassurance to administrators. Additional coverage may be obtained through the insurance carrier if the district feels the need.

Students involved in community training should have written approval from their parent(s)/guardian. This should be an informed consent document. Only individuals with this form on file should be involved in job site training. In addition, before training occurs the district should assure that insurance coverage is available on all students. Often families are offered insurance coverage for their child during the school day for a nominal fee. This liability insurance covers all instructional activities. It should be a requirement for any student involved in community training.

Students that have been placed into a position and are being paid a wage should be covered by the employer. The same coverage, should be available to them that is available to any other employee in that business. The trainers will be covered through the school system policy.

## Organization and Management of Personnel

Public school systems operate predominately from a school based instructional model. Traditionally schools do not employ personnel to implement community based job placement. Administratively it is convenient to restrict movement of individuals into the community. Large systems establish departments (special education, vocational education, vocational rehabilitation, etc.) who share responsibility of instruction for the handicapped. These departments strongly hold to traditional program implementation strategies. Often the major focus of program implementation is on providing mandated services and assuring that appropriate documentation is on file.

Successful implementation of a supported work program requires innovative organization and management of personnel. The first step is the commitment to a philosophy of preparing students to be productive members of the adult community. It is generally accepted that in order to prepare persons for life and work it is necessary to expose them to the real world. Thus, it is crucial that the students train and work in the community whenever possible.

Administration policies should be outlined for the implementation of all activities. Specific policies regarding liability and transportation must be clearly established. General guidelines for service delivery should be stated. We suggest that all students ages 12-15 should receive a minimum of two hours per day in organized vocational training. Individuals ages 16-18 should receive a minimum of three hours per day in job training sites. Students over the age of 18 should be placed in a competitive job or on training sites. Students over the age of 18 should be placed in a competitive job for the majority of the school day. Related community based training should be implemented concommitent to the vocational training. Community based training experiences should be scheduled before in-school activities. All scheduling should reflect class and individual instructional priorities. In addition, specific times should be established for exchange of information (teamings) between staff members (i.e. teachers, aides, therapists).

Related service personnel (speech therapist, occupational therapist, physical therapists, etc.) should provide their services during community based training.

These individuals should be involved in instruction that will increase the probability that individuals can obtain and hold a competitive job. Training should be implemented within the community or specific job site. Speech therapists can work on improving socialization skills with coworkers, ability to make needs known in grocery stores, etc. The occupational and/or physical therapist should improve the strength and stamina for individual in employment positions. In addition, these professionals can be involved in follow-up/monitoring activities of competitively employment individuals.

Staff should be hired and given job placement and training responsibility. These individuals should focus on job identification, job training and follow-up. This should be their full time responsibility. Each trainer should attempt to place one person every 2 months in a competitive employment position. The maximum placement and follow-up caseload for an effective trainer should be 15. The trainer should have rsponsibility for coordination of services for these individuals.

Unfortunately, economic times are such that many systems are unable to hire new personnel to do job placement. This should not prevent them from implementing the supported work model on a small scale. Schedules can be designed so that teachers can be freed from classroom responsibility. By scheduling activities such as music, art, etc. back to back, a teacher can be freed up to a half day for job-site training. Utilization of related service personnel, paraparofessionals and administrators can provide additional personnel for training and follow-up in competitive employment sites. Systems utilizing this approach should initially identify one classroom of individuals for job-site training and placement. The system many only be able to focus on part time work in the beginning. Once a successful track record is established the need for full time job placement personnel can be justified and increase the potential of employing job placement staff within the system.

## Summary

In the past few years we have seen dramatic changes in the multitude of services available to handicapped individuals. Based upon the repeated success of the supported work model with moderately/severely handicapped adults, it appears that it is time to apply this model to the job placement of students in public schools. Such an undertaking requires extensive changes in the curriculum, service delivery system and administrative arrangements used with the handicapped in secondary programs.

Educators can no longer be satisfied with instructional technology that moves students through nonfunctional programs which perpetuate the unemployment statistics. Decisive action needs to be taken toward improving the employment outcomes. We need to focus on quality service which puts into practice the available technology based on research and demonstration programs of recent years.

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## Section III: Parent Involvement

Parents have been left out of the employment planning process too often. Yet we know that viable competitive employment programs cannot work without a full partnership with parents. Hence in this section we present survey data on parental attitudes toward work, guidelines for parents in advocating employment, and an inventory of what skills parents think are most important for training. This section will be further expanded with our next volume.

# PARENT/GUARDIAN ATTITUDES TOWARD THE WORKING CONDITIONS OF THEIR MENTALLY RETARDED CHILDREN

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# Abstract

As major changes in vocational habilitation strategies are being articulated at the federal level, the attitudes of parents toward the working conditions of their mentally retarded children warrant careful attention. A mail survey was conducted from a representative sample in the State of Virginia of 660 parents/guardians yielding a 47.5% return rate. From demographic and attitudinal information surveyed, a series of one-way ANOVAS showed that parent attitudes toward vocational services for their child was strongly influenced by the developmental level of the child. It was not significantly influenced by age or sex of the child, or the educational level of the parents. Parents and guardians in this sample were generally negative about the changes in working conditions recommended in recent federal policy especially about increased wages. They indicated satisfaction with the current program placements for their children. Most persons indicated a positive attitude toward work for their children but ostensibly not toward competitive employment.

# Parent/Guardian Attitudes Toward the Working Conditions of Their Mentally Retarded Children

Evidence exists in the literature that parental attitudes may strongly influence the outcomes of intervention with individuals who are mentally retarded (Edge, Streneckly, & McLaughlin, 1979; Ferrara, 1979; Goldstein, 1979; Walthat & Love, 1974; Whitter, 1972). This relationship has been shown under a variety of circumstances ranging from work-oriented settings (Nitzberg, 1974) to recreational programs (Katz & Yekateil, 1974). Parental attitudes may affect the type of program placement selected for the mentally retarded son or daughter (Meyer, 1980) as well as expectations for program placements in the future (Venn, Dubose, & Merbler, 1977). Indeed, Eyman, Dingman, and Sabagh (1966) found a direct relationship between speed and ease of institutionalization and parental attitudes. That is, parents with more negative attitudes tended to have shorter waiting periods between referral and actual institutionalization.

Changes in social/rehabilitative policy are now being articulated by leaders in the field regarding the nature of comprehensive services for persons who are mentally retarded (Bellamy, Rhodes, Wilcox, Albin, Mank, Boles, Horner, Collins, & Turner, 1984; Wehman & Kregel, 1984; Will, 1984). These changes reflect a far greater emphasis on meaningful work for decent pay in integrated work settings for many retarded persons who have never worked before. Unfortunately, changes are being proposed without sufficient information on parental attitudes and parental input. Although some service providers may find the attitudes of parents not relevant to vocational program development, parental attitudes must be understood if successful changes are to occur. Without parental support, employment programs will not work (Kochany & Keller, 1981).

Establishing a baseline of parental attitudes toward vocational program needs is imperative since the type of employment, if any, experienced by a retarded person may drastically influence nearly every aspect of his or her life as well as alter parental responsibilities. At present, a description of the attitudes of parents regarding the vocational alternatives available for their children who are mentally retarded is absent from the literature other than very limited findings with small special interests groups (Venn et al., 1977). Although much research has involved the impact of the attitudes of teachers, other professional service providers, and even, age-peers (e.g., Gottlieb & Corman, 1975; Phelps, 1965; Rosenthal & Jacobson, 1968; Voeltz, 1980), there has been very little published literature relevant to the opinions of parents. Parents' attitudes must be known and be part of the decision-making process toward planning for the potential employment of their son or daughter. This is especially true in light of the deplorably high 50-75% national unemployment rates of disabled people (U. S. Commission on Civil Rights, 1983) as well as the notable discrepency in pay levels of $2.55/hour for disabled individuals versus $4.50/hour for nondisabled persons (Wolfe, 1980).

The purpose of the present investigation was to assess parental attitudes toward employment opportunities and adult services for their own mentally retarded, adult sons or daughters. Parents in the state of Virginia were surveyed regarding (a) the degree to which certain normalized working conditions should exist for their children; (b) the optimal vocational placement for the children; and (c) the degree to which parents believe work should be an integral part of life for their children. This investigation also attempted to identify the variables influencing the attitudes of parents. It is anticipated that the results of this report will help improve future programs aimed at realigning parental attitudes to reflect more accurate views of the vocational potentials of persons with mental retardation if appropriate supportive services are provided. Finally, since most of the literature on parental attitude shows very limited generality, a major emphasis of this investigation was to develop sampling procedures that would accurately represent the attitudes of parents and guardians with adult children from all mental retardation disability groups on a state-wide basis.

## Method

### Sample and Sampling Procedures

Reaching parents or guardians of persons who are mentally retarded on a state-wide basis has become increasingly and necessarily difficult in recent years due to the legal constraints of client confidentiality. In our efforts to draw a sample which would, in fact, be representative of parents' views in the state of Virginia, it was not possible simply to acquire a list of mentally retarded persons from state agencies. An alternative approach of obtaining a list of parents through the State Association of Retarded Citizens (ARC) or other parent organizations was also unacceptable due to concerns that members of such groups may not necessarily be "typical" parents of mentally retarded persons. Instead, a more arduous and time consuming approach was adopted, which involved the cooperation, time, and energies of a random selection of local mental retardation services systems throughout the State. The Deputy Commissioner and the mental retardation staff of the State Department of Mental Health and Mental Retardation (MH/MR) were instrumental in enlisting the cooperation and interest of the local service systems.

A stratified two-stage cluster sampling procedure was used to draw the sample for the attitude survey. The 37 community services systems in Virginia were stratified by geographic region using the State Department of MH/MR's five defined service areas (a geographic strata). The first step in the sampling procedure involved selecting 15 community services systems, three from each of the five geographic services areas. A sampling ratio of approximately .40 was used, resulting in the selection of one large, one medium, and one small community system at random within each geographic region. The second step involved using a .20 sampling ratio to select parents who would receive a survey by a systematic random procedure from each of the 15 community services boards. Of the 15 selected systems, only one declined to participate due to its recent reorganization of client files.

With the help of an investigator on-site, the sample was drawn and surveys were addressed and mailed from the office of each locality by the case manager. One week later, a follow-up letter was addressed and mailed by the locality office. In some cases, due to concerns for client confidentiality, service systems did not permit our assistance in drawing the sample or addressing surveys. This occurred in six out of 14 systems. With these six localities, written guidelines for drawing the sample were provided when the investigator delivered the survey materials. Procedures were thoroughly described and practiced with the case manager of the locality. In such cases, the service system later informed the first author of total number of surveys mailed. A total of 660 surveys were mailed throughout 14 localities.

Instrument

A team of five investigators with backgrounds in vocational training for individuals with severe handicaps and in survey research developed the attitudinal survey questionnaire. Item selection was based upon informational needs necessary for current planning of social and rehabilitative policy. Specifically, recently prescribed improvements in working conditions recommended by leaders in the field of vocational training for severely disabled persons were placed in a format in which parents could indicate their degree of concordance with each. Investigators were most interested in understanding parental attitudes toward the following qualitative issues currently affecting federal policy:

1. The need for improved wages (Bellamy et. al., 1984; Wehman, 1980).
2. The benefits of integration with nonhandicapped coworkers (Brown, Branston, Hamre-Nietupski, Johnson, Wilson & Gruenewald, 1979).

3. The need for greater job advancement opportunities (Rusch & Mithaug, 1980; Wehman, 1980).

4. The benefits of working under less supervised circumstances (Karan, 1978).

5. The need for increased expectations for adult-like behavior (Hill, Wehman, & Kochany, 1979).

6. The right to complete the same work tasks as nonhandicapped persons (Gold, 1972).

In addition to indicating their attitudes toward these state of the art issues, parents were asked to report 1) their actual preference for the optimal vocational setting or program for their child and 2) their agreement with the concept that work should be a normal part of life for their son or daughter (Bellamy, Sheehan, Horner, & Boles, 1980).

Finally, since this investigation sought to examine what variables may influence parental and guardian attitudes, respondents of the survey were also asked demographic information about their children and their families, and to provide information on programs in which their children were enrolled.

The questionnaire consisted of two sections. These were: (1) attitudes toward vocational programs, and (2) demographics on the child and on the parent/guardian and family. Each section is described below.

### Attitudes Section

The format of the survey for the attitude section was a Likert-type scale. In this section, parents were asked to indicate the degree to which they perceived their sons/daughters were currently exposed to the six qualitative practices listed above and their opinions regarding the optimal amount of exposure to each practice. Therefore, attitude questions were presented in pairs. The first of the pairs asked for the parents' attitude toward the current situation as they perceived it and the second of the pair asked the parents for the preferred situation on each issue. The first item of the pairs permitted responding on a four-point Likert scale ranging from "never" (1) to "frequently" (4), a don't know response was (5). The responses on the second of the paired items regarding preferences employed a five-point continuum, which ranged from _much less than now_ (1) to _much more than now_ (5).

In addition to the six pairs of questions regarding attitudes toward the working conditions listed above, the instrument also contained questions on the current and the preferred vocational placements for their children. The program options of both questions were: Institution, Home (no program), Activities Center, Sheltered Workshop, or Competitive Employment. These were considered a continuum from most restrictive/least normalized (Institutional) to least restrictive/most normalized (employment) for purposes of statistical analyses.

Finally, the attitude section of the survey asked parents to indicate their level of agreement with the following statement on a five-point Likert scale ranging from strongly agree to strongly disagree: _Work should be a normal part of life for my son or daughter_.

### Child and Parent Demographic Section

In the section on child demographics, respondents were asked for assessments of their childrens' level of development (IQ), communication skills, independence in self-help skills, and any secondary physical or sensory disabilities. Parents also gave the sex and age of their children. Respondents gave their own educational level, the occupation of the chief wage earner in the family unit, the respondents' sex and relationship to the mentally retarded individual in question.

### Validation Process

Before being printed, the survey underwent an extensive, three-phase review process by experts in the field and by parents of persons who are mentally retarded. Extensive revisions of the survey followed these reviews, particularly regarding language refinement and format.

In the first review, all staff of the Virginia Commonwealth University, Rehabilitation Research and Training Center (RRTC) on Competitive Employment of the Mentally Retarded were asked to judge the directions used for each item and the overall format. They were also asked to judge the extent to which the items in the questionnaire met the stated objectives of the investigation and the extent to which the items measured anything other than the intended objectives.

The second step in the validation process was to enlist the help of 10 parents of persons who were mentally retarded to respond to the survey. During a telephone interview conducted by the investigator, the parents were systematically questioned regarding their interpretation of the meaning of each item. Interviews ranged from 20 minutes to 60 minutes. Five of the selected parents had sons or daughters attending a local adult activities center and five were parents of individuals in competitive employment.

The final step in the validation process was to submit the survey to the review of eight nationally recognized experts in vocational training or parent advocacy. These experts were asked to complete the same review process as performed by the RRTC staff, described earlier. The survey was typeset in an attractive, professional quality leaflet format constructed for mailing in a regular business envelope.

## Results

A total of 660 questionnaires were mailed out by 14 community service systems. Of this number, 291 were returned after one "reminder" letter was mailed one week following the initial mailing. Postal services returned 48 surveys as undeliverable due to incomplete or incorrect addresses. This reduced the total number of returnable surveys to 612. Thus, the return rate for the survey was 47.5%. Of the 291 returned surveys, 22 surveys were not included in the analyses, because 30% or more of the questions were left unanswered. The final number for the statistical analyses, therefore, was reduced to 269.

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Table 1 provides detailed data on the characteristics of the sons and daughters and on the respondents themselves and their families. The demographics of the children in question show a representative sample, with fairly equal distribution across sexes, ages, and all disability groups. An examination of Table 1 shows slightly higher representation of males (59%) and a somewhat higher representation of individuals in their 20's (39%). Regarding developmental level (I.Q), the sample parallels the distribution of I.Q. levels in the general population served by adult mental retardation programs with the highest representation of individuals with moderate mental retardation. We find that 64% of the individuals lived at home with their families, only 12% resided in group homes, and approximately 20% in state institutions and other residential facilities.

The mentally retarded individuals in question were reported to be verbal (71%) to some degree, most (62%) were independent or nearly so regarding personal hygiene, and the majority (56%) displayed no secondary impairments.

Table 1 also shows an equal distribution of the respondents (i.e., parents/guardians themselves) across all educational levels and occupations categories, as seen in the right-hand column. Most respondents did not exceed high school (62%). Approximately 29% were in blue-collar type occupations (i.e., farm, service, and manual labor), and 37% were in occupations typically thought of as white collar positions (i.e., clerical, business, managers, and professionals). Interestingly, a large percentage (27%) indicated that they were not working at present. The vast majority (73%) of the respondents were female and most were either the natural mother or father to the individual in question (87%).

Table 2 shows responses to the attitude section of the survey. Parents'

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perceptions of the current situation appear in the left-hand column and their preferences for change in that situation appear in the right-hand column. Regarding current working conditions for their children, parents report very low wages, low job responsibility, high supervision, low requirements for adult-like behavior, and infrequent opportunities to perform the same tasks as nonhandicapped coworkers. The only practice parents/guardians believed was currently occurring on a frequent basis was opportunities for their children to interact with nonhandicapped persons.

Parental preferences for change in their sons'/daughters' working conditions are expressed in relation to the current situation (i.e., Do they prefer more of the improved working condition or less than now?). Examination of the right-hand column of Table 2 shows consistently that most parents prefer that the level of each condition of work remain as it currently stands now (i.e., the majority of parents responded "same as now" to most items). Specifically, 49% were satisfied with current wages, 54% with the current frequency of interaction with nonhandicapped persons, 59% with the reported low responsibility level, 52% with the current level of supervision, 66% with the current expectations for "normal" behavior and 61% were satisfied with the current opportunities to perform the same tasks as nonhandicapped persons.

Table 2 also shows the current program enrollment and the preferred or optimal vocational placement. Satisfaction with the status quo is reflected in the absence of marked preferences for different or more independent vocational placements. The one exception is in parents whose children reside in an institution or at home with no program. Many of these respondents tend to prefer a different placement.

Finally, Table 2 yields the percentages of responses regarding the parents' attitude toward work as a normal part of life for their children. Three-fourths of the respondents agreed with the concept of work and one-fourth showed disagreement or uncertainty with the importance of work.

## Statistical Analyses

Data were subjected to a series of one-way ANOVAS to examine the influence of developmental level of the child and other variables on parental attitudes. The dependent measures utilized in these analyses were: (1) a scale measure of "preferred working conditions" - described below; (2) preferred program placement; and (3) level of agreement with the concept work is a normal part of life, designated "attitude toward work".

The dependent measures of preferred program placement and attitude toward work were analyzed directly from survey responses. The first dependent measure, however, "preferred working conditions", was derived from responses to six pairs of questions regarding the parents' perceptions of current work conditions and their preferences for changes in each condition. Therefore, a preference scale was devised which assigned a single numerical value to each possible combination of responses to each of the six paired questions. This single value shows parental preferences for each of the six recently recommended improvements in the working conditions for the disabled described in current federal policy. Rather than computing a simple difference score for each pair, this preference scale was devised to be sensitive to discrepancies between actual and preferred levels as they related to a recommended working condition. Conceptually, the preference scale continuum ranges from responses indicating "child is currently exposed to this working condition but parent prefers less exposure" (negative attitude, score of -2) to "child is exposed and parent wants much more exposure" (positive attitude, score of +2). The midpoint of the scale (score of 0) represents responses indicating the "parent perceives frequent exposure and prefers same amount as now." After the six individual scores were computed, a total preference score was calculated by taking the algebraic sum of the six single preference scores. Thus, there were a total of seven values for this dependent measure, representing a single value for each of the six working conditions and a total preference value.

### Validation of Preference Scale

The validation of the preference scale was established by analyzing preferred program placement groups (i.e., groups made up of parents who preferred each of the different program options) by preference scale scores. The results of ANOVAS employing the single and total preference scale scores as dependent variables are shown in Table 3. Examination of the group means reveals that in every analysis, as preferred program placement moves from the most restrictive, least normalized alternative (institutionalization) to the least restrictive, most normalized alternative (competitive employment), the preference scores move in a positive direction. This movement in a positive direction shows preferences for more exposure to the innovative, more normalized six working conditions. Preferences for the improved working conditions inherently defines interest in more normalized work placements (i.e., competitive wages, contact with nonhandicapped, etc.). Therefore, high correlation of scale scores showing attitudes toward the six recommended working conditions with parents' preferences for work placements with those working

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conditions validates the conceptualization of the scale. Post-hoc analyses revealed that the groups differed in the expected pattern in every analysis.

## Age of Child and Educational Level of Parent

In primary analyses of this investigation examining the effect of various demographic variables on the three dependent measures, ANOVAS yielded no significant differences in groups using the independent variables of age of the child or educational level of the parent. The results described below were conducted using IQ/developmental level as the independent variable. Student-Newman-Keuls post-hoc analyses employing harmonic means to adjust for unequal cell sizes were used to find group differences for this model which achieved significance.

## Developmental Level

Table 4 presents the ANOVA results and group means obtained for the analysis employing Developmental Level as the independent variable with the three dependent measures described above. The results obtained are particularly striking when the group means are examined. A linear trend may be observed across most of the preference scores as well as the total preference score (Items 1 through 7 in Table 4). The same effect is also reflected in group means for preferred program placement (Item 8) and parental attitude toward work (Item 9).

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Although limitations due to sample size and cell ns do not permit identifying each I.Q. level as a statistically different group on each dependent variable, the groups found in post-hoc analyses are in virtually every case indicative of the same general finding - preference for the prescribed working conditions is universally lower (and negative) in the lower developmental groups, while in the higher developmental groups it is higher and almost always positive. Similar trends were found in preferred program placement (when this variable is conceptualized on a continuum representing level of restrictiveness or degree of normalization) and in parental attitude toward work.

The groups which responded similarly on three of the dependent measures, (1) total preference score, (2) preferred placement and (3) attitude toward work, were identified by post-hoc analyses as well as the groups that showed significantly different responding. These are given below for each dependent variable.

1. Total Preference Scale Scores (i.e., the algebraic sum of the six single preference scores).

Group A: Parents of borderline and mildly retarded persons responded similarly.

Group B: Parents of moderate, severe and profound groups responded similarly.

*Groups A & B, however, showed significantly different responding on preferences for the six working conditions.

2. Preferred Program Placement

Group A: Parents of borderline and mild groups responded similarly.

Group B: Parents of moderate and severe groups responded similarly.

Group C: Parents of profound group differed from other groups on preferred placements.

*Groups A, B., & C showed significantly different responding on preferred program placements.

3. Attitude That Work is Normal to Life

Group A: Parents of borderline and mild groups responded similarly.

Group B: Parents of moderate and severe groups responded similarly.

Group C: Parents of profound group differed from other groups on general attitude toward work.

*Groups A, B, and C) showed significantly different responding on general attitude toward work.

The differing attitudes of the five I.Q. level groups can be seen by the display of group means in Table 4. On preference for prescribed working conditions items 1 through 7, a negative (-) value indicates low or negative parental attitude toward the working condition, a (0) value indicates satisfaction with what they believe to be the frequent exposure their child has to this practice; and a positive (+) value indicates a preference for more exposure for their child to the condition. Values can range from -2 to +2. Mean scores shown for preferred program placement, item 8, in Table 4, represent the following: 1=institution, 2=home (no program), 3=an activities center placement, 4=a sheltered workshop, and 5=competitive employment placement. Likewise, mean scores showing parental attitude that work should be a normal part of life are: Strongly Disagree=1; Mildly Disagree=2; Not Sure=3; Mildly Agree=4; and Strongly Agree=5.

## Increased Wages

Examination of groups means in Table 4 show that parents of all disability groups indicate negative or low interest in increased wages. The lowest values were calculated for parents of profoundly handicapped children and the highest value (though still negative) was found for parents of the borderline mentally retarded group. Other differences in the attitudes by developmental level of the child on the other dependent variables will be briefly described below.

## Profoundly Handicapped Group

Parents/guardians of the profoundly handicapped group yielded negative or low interest responses for all of the recommended improvements in working conditions. They indicated particularly low acceptance of their children performing the same tasks as nonhandicapped persons and in being exposed to increased responsibility. The condition for which these parents showed most acceptance was increased interactions with nonhandicapped persons but this still fell in the negative range. As can also be seen in Table 4, on the average these parents chose an activity center ($\bar{x}$=2.87) for the optimal placement, and parents of profoundly handicapped showed a mean response of "not sure" ($\bar{x}$=3.08) that work should be a normal part of life for their children.

### Severely Handicapped Group

Parents of severely handicapped persons responded similarly to the profoundly handicapped group on their lack of interest in each of the more normalized working conditions. Thus, they were most negative about increased wages, responsibility and performing the same tasks as nonhandicapped persons. These parents, however, showed a satisfaction value (near zero) for their childrens' interactions with nonhandicapped coworkers, i.e., they believed their children were frequently exposed to nonhandicapped persons and they were satisfied. They selected an activity center ($\bar{x}$=3.27) as the optimal placement for their children and also showed a mild agreement with the concept that work is normal ($\bar{x}$=3.90) in contrast to the uncertainty of parents of profoundly handicapped.

### Moderately Handicapped Group

Parents of moderately handicapped adults responded more similarly to the severe/profound groups than to the mild and borderline groups in that they also showed negative interest in wages, expectations for more "normal" behavior, increased responsibility and performing the same tasks as nonhandicapped persons. They showed satisfaction in what they considered "frequent" exposure to opportunities to work with less supervision and to interact with nonhandicapped persons. They showed a mid-range response for preferred program placement between activities centers and sheltered workshop ($\bar{x}$=3.58) and showed mild agreement ($\bar{x}$=4.30) with the concept of work being a "normal" part of life for their child.

Mildly Handicapped and Borderline Group

Parents of mildly and borderline handicapped individuals showed significantly more positive values on the preference scale for more normalized working conditions with the exception, as stated above, of increased wages. Both groups showed a trend toward a preference for their children to be exposed to programming with less supervision, but only the borderline group showed that same trend toward preferring increased interactions with and performing more of the same tasks as nonhandicapped persons. Group means also showed that the parents of mildly handicapped and borderline mentally retarded persons ($\bar{x}$=4.0 and =4.3 respectively) preferred they be placed in sheltered workshops. Both groups strongly agreed ($\bar{x}$ = 4.74 and 4.78 respectively) with the concept that work should be a normal part of life for their children.

## Discussion

The sampling procedures selected served the investigation well in that this survey was designed to examine the attitudes of a representative sample of parents or guardians of mentally retarded adults who are currently being served within the adult service systems in Virginia. Logic tells us that the majority of these individuals would indeed be in their 20's and 30's due to the post-war baby boom, with a lower incidence of severe and profound disabilities. We also expected a naturally larger percentage of moderately handicapped individuals because many mildly involved would not necessarily require adult mental retardation services. We assumed further that most would live at home due to deinstitutionalization efforts. As evidenced by Table 1, the sample of this investigation does appear to be most representative of the range of individuals who are in need of adult services. Confidence is, therefore, increased in the generalizability of these results.

As anticipated, parents did not prefer the recommended improvements in the working condition now guiding federal policy (e.g., increased wages, responsibilities, etc.). In general, although parents agreed with the concept of work being a "normal" part of life for their child, parents appeared satisfied with what would generally be considered by the nonhandicapped population as poor working conditions experienced by their sons/daughters (i.e., low pay, low responsibility, etc.) Parents also showed satisfaction with the current vocational placements available for their sons/daughters. Parents were particularly negative about increased wages and responsibilities for their sons/ daughters. These apparent inconsistencies in parental/guardian thinking may echo previous research findings, which show that survey respondents may indicate positive attitudes toward philosophical constructs but show more negative attitudes when such constructs may actually affect them or their children personally (Ferrara, 1979).

Age of the child and educational level of the parent had no significant effects on the response patterns. Level of development (IQ) did show highly significant effects on the dependent measures. Developmental level consistently exerted influence on all measures including preferences for the improvements in working conditions, the selection of the optimal vocational placement, and the attitude that work is a normal part of life. This finding runs contrary to Ferrara's (1979) more limited survey results of parental attitudes toward general normalization practices, which found no effect of level of retardation on attitudes. The present investigation with its more representative sample shows very powerful influence of the child's IQ level on the attitudes of his/her parents. The influence of this variable is so clear that its effects are seen on every dependent measure with more positive attitudes increasing gradually with each higher I.Q. level.

Interestingly, results show that parents of persons who are moderately retarded tend to respond more similarly to parents of severely and profoundly handicapped than to parents of the mild or borderline group. Why parents of moderately retarded persons consistently show significantly more negative expectations for increased wages, responsibility, etc., than parents of more mildly handicapped is not completely understood in that the moderately handicapped individuals tend to have characteristics more similar to persons diagnosed as more mildly handicapped than to severely/profoundly individuals. Persons with severe or profound handicaps often have secondary physical or sensory handicaps while most moderately mentally retarded people do not. Yet parents of moderately handicapped tended to concur more with the more severely involved group regarding working conditions for their children, program preferences, and attitude toward work. It is possible that the attitudes of these parents may have been influenced by the highly restrictive/protective services traditionally supplied to the persons who are moderately retarded, particularly at the school-age level but also often at the adult service level in the form of the activity center or developmental center placement.

The results of this investigation tell us, perhaps, not surprisingly, that much more parent/professional communication is needed to improve parental expectations for the vocational potentials of their children who are mentally retarded. General results show that at present, parents' expectations do not concur with the recently described professional expectations found in federal policy that most persons who are mentally retarded can transition into the mainstream of employment. Results also indicate that parents will not accept the recent trend to change the status of the mentally retarded adult from tax-burden to taxpayer without many more assurances than are currently provided.

More specifically, these data show that all parents but especially those with children functioning at lower developmental levels, need to be drawn into the educational process to improve the description of what adequate working conditions for mentally retarded persons ought to be. Parents also need to begin to evaluate current services in a more critical manner. For example, these survey results show most parents/guardians believe their sons and daughters are currently interacting with nonhandicapped peers on a frequent basis and most expressed satisfaction with this exposure. Unfortunately, the types of program placements that 95% (only 5% of this sample was in competitive employment) of their sons/daughters were currently attending do not include frequent exposure to nonhandicapped peers. Thus, parents are not critically evaluating programs regarding this issue, in particular.

These survey data illustrate vividly the need for the development of a parent/professional partnership toward improved vocational services for disabled persons. Parents' concerns must be analyzed in this process, for many of these concerns are undoubtedly due to financial discentives which exist regarding loss of government aid payment if these individuals join the competitive work world. This concern was voiced clearly in these results, in that all parents, even of mildly handicapped individuals, showed no preferences for improved wages. This is a legitimate and serious concern on the part of the parents, which illustrates that only by directly identifying parents' concerns and obstacles can we develop improved services for disabled persons. If an improved communication process can be established between parents and professionals on vocational issues, parents will once again be called upon to assume the role of major change agent for improved vocational services for handicapped adults - the same role they held over a decade ago for free and appropriate public school services for all handicapped children.

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## Table I
## Characteristics of the Population

### Mentally Retarded Persons in Question

| Sex | |
|---|---|
| Male | 59% |
| Female | 41% |

| Age | |
|---|---|
| 17 or less | 2% |
| 18 - 22 years | 17% |
| 23 - 30 years | 39% |
| 31 - 40 years | 29% |
| 41 or over | 13% |

| Developmental (IQ) Level | |
|---|---|
| Profound (IQ 19 or below) | 9% |
| Severe (IQ 20-35) | 21% |
| Moderate (IQ 36-51) | 39% |
| Mildly (IQ 52-67) | 19% |
| Borderline (IQ 68-83) | 12% |

| Residential Situation | |
|---|---|
| State Institution | 14% |
| ICF/MR | 6% |
| Living w/parents/relatives | 64% |
| Group Home | 12% |
| Special Apartment | 1% |
| Other | 3% |
| Foster | 1% |

| Primary Form of Communication | |
|---|---|
| No meaningful form | 7% |
| Sounds/Gestures | 9% |
| One-or-two-word phrases | 10% |
| Speaks in sentences (Unclear) | 33% |
| Speaks in sentences (Clear) | 38% |
| Manual Sign | 3% |

| Personal Hygiene Assistance Needed | |
|---|---|
| Total | 12% |
| Major | 7% |
| Some | 18% |
| Minor | 23% |
| None | 39% |

| Secondary Disabilities | |
|---|---|
| Sensory impairment | 20% |
| Amublation impairment | 20% |
| Fine Motor impairment | 14% |
| No other impairment | 56% |

### Respondents

| Educational Level | |
|---|---|
| Not beyond 8th grade | 21% |
| Not beynd 12th grade | 41% |
| Technical/Post-High School | 9% |
| College | 29% |

| Occupation of Chief Wage Earner | |
|---|---|
| Farm | 3% |
| Protective or Svs. Wkr. | 13% |
| Manual Laborer | 13% |
| Clerical Person | 5% |
| Business Person | 5% |
| Proprietor/Manager | 5% |
| Professional | 22% |
| Not working | 27% |
| Retired | 6% |

| Sex of Respondent | |
|---|---|
| Male | 25% |
| Female | 73% |

| Relationship to Client | |
|---|---|
| Mother/Father | 87% |
| Relative | 9% |
| Legal Guardian | 3% |
| Foster Parent | 1% |
| Friend | .5% |

Table 2

## PARENTAL ATTITUDES TOWARD WORKING CONDITIONS

| Perceptions of Current Working Conditions | | Preferred Working Conditions for Child | |
|---|---|---|---|
| **Average Current Wages** | | **Preferred Waged** | |
| No Pay | 41% | No Pay | 5% |
| Less than $1/hour | 23% | Less than Now | .4% |
| $1.01 to $2.50/hour | 10% | Same as Now | 49% |
| $2.51 to $3.34/hour | 3% | More than Now | 25% |
| Above $3.35/hour | 3% | Much More | 12% |
| Don't Know | 21% | Not Sure | 9% |
| **Current Interaction With Nonhandicapped** | | **Preferred Interactions** | |
| Never | 7% | Less than Now | 2% |
| Rarely | 13% | Somewhat Less | 4% |
| Sometimes | 22% | Same as Now | 54% |
| Frequently | 46% | Somewhat More | 30% |
| Don't Know | 11% | Much More | 10% |
| **Current Responsibility and Advanced Opportunities** | | **Preferred Responsibility and Advancement Opportunities** | |
| Never | 36% | Less than Now | 0% |
| Rarely | 13% | Somewhat Less | .4% |
| Sometimes | 28% | Same as Now | 59% |
| Frequently | 25% | Somewhat More | 28% |
| Don't Know | 17% | Much More | 12% |
| **Current Level of Work Without Supervision** | | **Preferred Level of Work Without Supervision** | |
| Never | 17% | Less than Now | 0% |
| Rarely | 13% | Somewhat Less | 2% |
| Sometimes | 28% | Same as Now | 52% |
| Frequently | 25% | Somewhat More | 29% |
| Don't Know | 17% | Much More | 17% |

Table 2 - Continued:

| Requirements to Exhibit "Normal" Behavior During Work | | Preferred Level of Requirements to Exhibit "Normal" Behavior During Work | |
|---|---|---|---|
| Never | 14% | Less than Now | 3% |
| Rarely | 7% | Somewhat Less | 5% |
| Sometimes | 16% | Same as Now | 66% |
| Frequently | 25% | Somewhat More | 20% |
| Don't Know | 38% | Much More | 7% |

| Current Performance of Same Tasks as Nonhandicapped Workers | | | |
|---|---|---|---|
| Never | 19% | Less than Now | 9% |
| Rarely | 14% | Somewhat Less | 3% |
| Sometimes | 19% | Same as Now | 61% |
| Frequently | 21% | Somewhat More | 28% |
| Don't Know | 26% | Much More | 7% |

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Vocational Placement

| Current Placement | | Preferred Placement | |
|---|---|---|---|
| Institution | 10.4% | Institution | 5.6% |
| Home (no program) | 17.2% | Home | 4% |
| Activities Center | 23.3% | Activities Center | 25.6% |
| Sheltered Workshop | 43.7% | Sheltered Workshop | 52% |
| Competitive Employment | 5% | Competitive Employment | 12.8% |

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Attitudes Toward Work

Work should be a normal part of life for my son or daughter.

| Strongly Disagree | Mildly Disagree | Not Sure | Mildly Agree | Strongly Agree |
|---|---|---|---|---|
| 4% | 2% | 18% | 16% | 60% |

## Table 3

### Preferred Program ANOVA Results and Group Means

| Dependent Variable | $F^1$ | $df^2$ | Preferred Program Group Means - Insti. | Home | Activity Center | Shelt. Workshop | Comp. Emp. |
|---|---|---|---|---|---|---|---|
| Increased Wages | 11.67* | 198 | -1.00 | -1.00 | -0.96 | -0.67 | 0.12 |
| Interaction With Nonhandicapped | 3.41 | 229 | -0.64 | -0.50 | -0.27 | -0.31 | 0.45 |
| More Responsibility | 14.41* | 190 | -1.00 | -1.00 | -0.51 | -0.07 | 0.81 |
| Less Supervision | 7.73* | 228 | -0.92 | -0.89 | -0.10 | -0.27 | 0.70 |
| Higher Behavior Expectations | 9.30* | 203 | -1.00 | -0.78 | -0.49 | -0.16 | 0.76 |
| Same Tasks as Nonhandicapped Coworkers | 7.45* | 212 | -1.00 | -0.78 | -0.33 | 0.00 | 0.59 |
| Total Preference for Improvements | 13.48* | 148 | -5.86 | -4.50 | -2.32 | -0.40 | 4.53 |

1* $p < .0001$
$p < .05$ for all others

2 numerator df = 4

## Table 4

### Developmental Level ANOVA Results and Group Means

| Dependent Variable | F[1] | df[2] | --Developmental Group Means -- Profound | Severe | Moderate | Mild | Borderline |
|---|---|---|---|---|---|---|---|
| 1. Increased Wages | 4.12* | 206 | -1.00 | -0.90 | -0.72 | -0.44 | -0.38 |
| 2. More Interactions | 2.50 | 237 | -0.25 | 0.11 | 0.22 | 0.24 | 0.60 |
| 3. Higher Responsibility | 6.65** | 192 | -0.61 | -0.59 | -0.21 | 0.14 | 0.44 |
| 4. Reduced Supervision | 3.58 | 234 | -0.30 | -0.06 | 0.11 | 0.38 | 0.67 |
| 5. Adult-like Behavior | 6.23** | 210 | -0.64 | -0.42 | -0.31 | 0.24 | 0.33 |
| 6. Same Tasks as Nonhandicapped | 9.28** | 219 | -0.77 | -0.55 | -0.04 | 0.24 | 0.63 |
| 7. Total P Score | 9.27** | 150 | -3.88 | -3.25 | -1.31 | 1.50 | 2.30 |
| 8. Preferred Program | 13.20** | 235 | 2.87 | 3.27 | 3.58 | 4.0 | 4.3 |
| 9. Attitude Toward Work | 15.13** | 249 | 3.08 | 3.90 | 4.30 | 4.74 | 4.78 |

---

[1]
** *p* < .0001
* *p* < .01
*p* < .05 for all others

[2]
numerator *df* = 4

---

Interpretation of Group Mean Values

Items 1-7 (negative (-) value = low parental interest; zero (0) value= satisfaction with current high exposure; positive (+) value = high parental interest).

Item 8 (3=Activities Center; 4= Workshop; 5=Competitive Employment).

Item 9 (3=Uncertain work should be normal part of life; 4=mildly agree; 5=strongly agree).

# FACTORS INFLUENCING PARENTS' VOCATIONAL ASPIRATIONS FOR THEIR RETARDED CHILDREN

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## Abstract

Parents' vocational aspirations for their children are based on assessments by the children's abilities and of employment opportunities. Aspirations held by parents of mentally handicapped persons are tempered by knowledge of the children's limitations and of restricted opportunities. This research was intended to develop a measure of parents' vocational aspirations for their retarded children and to examine relationships between aspirations and other factors. A 32-item Likert type questionnaire was mailed to members of a stratified random sample of parents and guardians of retarded persons identified from files maintained by community services agencies. Respondents were 233 parents from this group. Data were analyzed using multiple regression, with the vocational aspiration score serving as dependent variable. The equation accounted for 26 percent of the variance. Significant factors were parents' attitudes toward work as a normal part of life, child's age, and child's developmental level.

# Factors Influencing Parents' Vocational Aspirations for Their Retarded Children

In recent years a number of programs have been developed to teach vocational skills to mentally retarded persons (Bellamy, Horner, & Inman, 1979; Mithaug, 1981). Some of these programs go further and provide job placement and follow-up services to their clients (Rusch & Mithaug, 1980; Wehman, 1981). In keeping with the trend toward normalization in many aspects of society's attitudes toward persons with mental retardation, these programs have helped mentally retarded workers gain employment in which they work beside and perform the same tasks as nonhandicapped workers.

Vocational training and placement of retarded persons have important potential benefits for the individuals involved, including enhanced feelings of efficacy and self worth. But there are offsetting dangers and disadvantages as well. These include the possibilities of physical injuries (Lynch, 1979), exploitation, abuse, and loss of guaranteed financial aid payments (Kochany & Keller, 1981). Parents of retarded people may be either well informed or poorly informed about the benefits and potential disadvantages of employment. Based upon the information they have, they formulate notions about the kind of work their child is capable of doing and of the type of work setting which is most appropriate for their child. All parents hold idealized expectations of their child's potential and prospects in the world of work (Venn, DuBose, & Merble, 1977). These expectations may be either realistic or unrealistic (Johnson & Capobianco, 1957).

These notions, which we are calling vocational aspirations, range from the identification of specific occupations with some parents to broad, overarching goals having to do with education and the quality of life, for others. Parents' aspirations are influenced by what they believe to be of most value in life and by the relative importance they attach to such motives as material well-being, personal achievement and recognition, interpersonal competition and success, emotional/material security, and so on. Parents are also influenced by their own definitions of the purpose and meaning of work. Kahn (1981) reports that a majority of all employed Americans say they would continue to work even if it were not necessary financially for them to do so. For these people, the social and psychological rewards they derive from their jobs exceed the economic benefits they receive. Presumably, their aspirations for the children would include work.

Vocational aspirations are obviously influenced by parents' beliefs about their children's interests and abilities. For mentally retarded persons, ability is a primary consideration governing vocational prospects (Olskansky & Schonfield, 1965). Although the likelihood of success in a given job is influenced by many factors other than mental ability, there are threshold requirements in most occupations which effectively close out some persons from entering those fields. For retarded persons, even the logistics of daily life (for example, telling time or traveling on a public transportation system) are challenges that often limit their immediate prospects for gainful employment.

Parents presumably consider all of these factors in arriving at some determination of their children's vocational abilities and prospects. The process is not as rational as depicted here, however, since parents operate with limited information about their children and about the specifics of job requirements and opportunities and about labor market conditions. Other factors also play a part in determining parents' opinions about vocational choices for their children, as we have observed earlier.

To gain a clearer understanding of the factors that shape parents' vocational aspirations for their retarded children, we undertook a major study of this subject using a sample of parents of retarded persons in Virginia. Two primary objectives guided this research. The first was to develop a measure of parents' vocational aspirations for their retarded children. The second objective was to determine the extent to which factors such as parents' educational level and attitude toward work and the retarded person's age and sex influenced those aspirations.

## Method

### Sample

The respondents in this study were mothers or fathers of mentally retarded persons 17 years of age or older who had received or were receiving services from one of several community services agencies in Virginia. All of the agencies were semi-autonomous arms of state government and were the means by which state funds and policy decisions were transmitted to localities. Some of the agencies offered services such as adult activity centers, sheltered workshops, summer camps, and transportation for mentally retarded persons in their localities, while others contracted with private suppliers to provide those services. The level of services offered varied, depending, among other things, on the size of the client population in a locality.

The 40 community services agencies in Virginia were stratified by size of client population and geographic region (McCall, 1980). The three levels of client population size and five geographic regions produced 15 cells, and one service agency was selected at random from each cell containing two or more agencies. Where cells contained only one agency, that agency was included in the sample. Fourteen of the 15 sampled agencies agreed to participate in the study.

From the client files of each of the participating agencies, a 20 percent systematic sample of clients' names was drawn following a random start. The selection criterion required that a client be 17 years of age or older and identified as mentally retarded by the agency. If a client failed to meet the criterion, his or her name was deleted and the next name in the file was chosen. If that person failed to meet the criterion, the next name was examined. The process continued until a qualified candidate was obtained. A questionnaire was mailed to the person listed by the agency as the retarded person's parent, guardian, foster parent, or next of kin. A total of 660 questionnaires were mailed, of which 48 were subsequently returned as undeliverable by the Postal Service. Usable responses were received from 269 individuals, of whom 233 were parents. The present study used data furnished by the 233 parental respondents.

## Instrument

The Parent-Guardian Attitude Survey was developed over a six month period by a research team which included experts in mental retardation and survey research methodology. The instrument was validated in two ways. First, experts in mental retardation were asked to judge whether the items were satisfactory operational measures of the variables of interest. Secondly, parents of retarded persons were interviewed after they had completed the questionnaire. Information from these sources was used to refine and clarify a number of items.

The final version of the instrument consisted of 32 items. A series of paired questions asked respondents, first, to specify the existing level of a program or employment characteristic available to their mentally retarded son or daughter and, second, to report their preference for the level of that characteristic.

Two sample items were:

1. At present, how often does your son or daughter complete the same work tasks as nonhandicapped persons?

   Response choices were: Never, rarely, sometimes, and frequently, scored 1 to 4 respectively.

2. In your opinion, how often should your son or daughter complete the same work tasks as nonhandicapped persons?

Response choices were: Much less than now; somewhat less than now; same as now; somewhat more than now; much more than now; scored 1 to 5.

Other items dealt with present and preferred levels of income, contact with nonhandicapped pesons, opportunity for promotion, freedom from supervision, and expectation to look and act "normal". Other items asked for demographic information and about the attitude that work should be a normal part of life for their child.

A scale to measure parents' vocational aspirations for their children was developed by summing responses to three items. The first measured parents' preference for the frequency with which their child should be promoted to a job involving more pay or greater responsibility. The second item asked parents to report how often they preferred their son or daughter to work on his/her own "without a supervisor nearby to help," and the third item asked how often parents felt their son or daughter should complete the same work tasks as nonhandicapped persons. The items were selected as representative of characteristics identified as desirable in their jobs by workers in a variety of settings.

Possible scores on the vocational aspiration scale ranged from 3 to 15. A higher score indicates a greater parental preference for their retarded sons and daughters to work in settings characterized by relatively high levels of autonomy and responsibility and by low levels of discrimination in assignment of work tasks. The mean score on the vocational aspiration scale for all responding parents was 10.53 (S.D. = 1.76, N = 163). (The number was less than the total number of respondents because of nonresponses). Internal consistency reliability for the scale was .72, as measured by Cronbach's alpha.

Eight variables were examined for their effect on the parents' vocational aspiration scale score. These variables were:

1. Attitude toward work. Parents responded on a 5-point agree-

disagree scale to the statement "Work should be a normal part of life for my son or daughter." Responses were recoded so that a higher score indicated stronger agreement.

2. Parents' education level. Four levels of schooling were provided: 1 to 8 years, 9 to 12 years, post high school technical training, and college, coded 1 to 4 respectively.
3. Age of son or daughter. Five age levels were provided: 17 years or less; 18-22 years; 23-30 years; 31-40 years, 41 or over. Responses were coded 1 to 5 respectively.
4. Sex of son or daughter. Responses were coded 1 (female) or 2 (male).
5. Size of community agency. Agencies were classified by the size of the mentally retarded clientele served. Stratum 1 included agencies with up to 120 clients; stratum 2 included agencies with between 121 and 250 clients; and stratum 3 included all agencies with more than 250 clients. Of the 14 agencies sampled, 5 were in stratum 1, 5 in stratum 2, and 4 in stratum 3. Stratum 1 was coded 1; stratum 2 was coded 2; and stratum 3, coded 3.
6. Program. Programs were ranked on a 4-point scale as follows: 1 - Activities programs, home, institution and school; 2 - sheltered workshops; 3 - enclave employment; and 4 - competitive employment.
7. Developmental level. A five point scale was used, ranging from profoundly retarded (IQ 19 or below), coded 1, to borderline (IQ 68-83), coded 5.
8. Assistance required in personal care. A five point scale was used with responses ranging from nearly total assistance required, coded 1, to no assistance required, coded 5.

## Results

Means and standard deviations for eight independent variable and one dependent variable used in the multiple regression equation are reported in Table 1. Parents disagreed with the statement that work should be a normal part of life for their sons and daughters. The mean response to that item was 1.48; the maximum possible score was 5.00. Mean response to the question dealing with level of educational attainment fell between 2.00 (completed grades 9 to 12) and 3.00 (attended post high school technical school). The mean response to the question on the age of the son or daughter fell between 3.00 (23 to 30 years) and 4.00 (31-40). The mean response to a question dealing with the amount of assistance required by the son or daughter was 3.71, which fell above 3.00 (some assistance required) and below 4.00 (minor assistance required).

Table 2 reports intercorrelations among the eight independent variables. The variables parents' education and age of son or daughter were negatively correlated at the .05 level of significance. Age of the son or daughter was negatively correlated with program placement, also at the .05 level. Parents' education and program placement were negatively correlated at the .01 level of significance.

Four pairs of variables were correlated at the .001 level of significance. Parents' attitude toward work was negatively correlated with the level of assistance required by the son or daughter and with the child's developmental level, and developmental level was positively related to level of assistance. Finally, parents' education was positively related to agency size.

Multiple regression was used to assess the effect of the eight independent variables on parents' vocational aspirations.

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Insert Table 1 & 2 about here

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The results of the multiple regression appear in Table 3. The F value of

6.01 is significant beyond the .0001 level of probability, but the eight variables account for only about one-fourth of the variance in parents' vocational aspiration scores.

The use of t-tests showed that three of the eight variables explained significant amounts of variance in the dependent variable. Parents' attitude toward work as a normal part of life for their son or daughter had an estimated beta of -0.57, indicating that parents with more favorable attitudes toward work were less likely to hold high vocational aspirations. The t score of -2.96 was significant at the .004 level.

The son's or daughter's age was the second significant variable. The t score of -2.46 ( $p < .015$) and beta estimate of -0.35 indicated that parents of older persons held lower aspirations when compared with parents of younger persons. The child's developmental level was the third significant variable in the equation. A t score of 3.04 ($p < .003$) and estimated beta of 0.45 suggested that parents of children with higher developmental functioning held higher vocational aspirations for their children when compared with parents whose children functioned at lower developmental levels.

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Insert Table 3 about here

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## Discussion

Why should parents' vocational aspirations for their children change over time, as the children age? Several possible explanations will be examined. One explanation holds that the mediating variable for parental aspirations is the child's developmental level. The argument suggests that as a child grows older, parents have more information on which to base such judgements and that they adjust their aspirations to bring them more nearly into line with the child's demonstrated potential. Declining scores would indicate that parents' initial judgements of their children's abilities had been unrealistically high, while rising scores would suggest that parents had initially underestimated their children's capabilities.

A second explanation begins with the assumption that vocational opportunities are more limited for older, as compared to younger, workers. Thus, parents may be accommodating to the realities of labor market conditions by adjusting their aspirations in light of vocational opportunities available to their children. If this explanation is correct, we would expect vocational aspiration scores to decline over time, as a child's increasing age becomes a greater limitation on his or her employment prospects.

The Spearman correlation of rho = $-.16$ ($p < .03$) between parent's aspiration scores and the age of their mentally retarded sons and daughters does not permit us to rule out either of these two possibilities. We can say only that it is unlikely, based on these data, that parents form unrealistically low conceptions of their children's vocational prospects and later raise their aspirations. Whether parents adjust their aspirations because of earlier overly optimistic estimates of their children's potential or because of awareness of an age bias factor in employment decisions is unclear. It is possible, of course, that both factors play a part.

The explanations advanced here assume an absence of a generational influence. However, as attitudes toward the handicapped evolve and change parent's vocational aspirations would be expected to change at the same time. Thus, higher aspirations held by parents of younger persons may reflect changing attitudes about the suitability of vocational programs for retarded persons.

Both developmental level and parents' attitude toward work explain significant amounts of variance in parent's aspiration scores, yet the assistance required variable contributes nothing to the regression equation. The explanation for that unexpected finding can be found by examing the zero order correlations of those three variables in Table 2. All three are intercorrelated at a highly significant level. The assistance required variable was entered later than the other two into the regression equation and its effect on the parents' vocational aspiration scores was thus attenuated.

Another perspective on these changes in parents' aspiration scores over time explains them as a function of the parents' age. There is some evidence that as parents age and face their own mortality, they attach less importance to their children's vocational success. According to this view, the focus of their concern shifts away from attention to developmental opportunities for the child toward providing for care and support of their children in the future, when the parents are no longer on the scene (Kotsopoulos & Matathia, 1980). If this is true, earlier attention to employment prospects for retarded persons in the public schools (Wehman, 1983) must be considered, along with provision for parental involvement at earlier ages of their children.

## Summary

The purpose of this research has been to develop a measure of parents' vocational aspirations for their retarded children and to identify factors which influence those aspirations. The measure of vocational aspirations used attains a satisfactory level of reliability and touches on three aspects of work which are considered desirable by most people. The three are autonomy in deciding how to perform the work, the opportunity to advance to positions of greater pay and responsibility, and the opportunity to perform tasks that challenge ones ability.

The multiple regression analysis shows that parents' vocational aspirations are influenced by children's characteristics (age and developmental level) and by parents' values and beliefs (attitude toward work). Other characteristics of children (sex) and the parents (education) appear to have little or no impact.

The failure of parents' educational level to influence the aspiration score is somewhat surprising, as is the negative correlation (rho = -.19) between parents' level of education and program type. Further research to clarify the meaning of those findings is needed.

Agency size appears to be unrelated to parents' aspirations for their children. Agency size is a proxy for urbanism, since larger agencies are more often found in or near cities and these agencies may tend to offer a greater variety of and more innovative programs. It was assumed that parents served by those agencies would have more knowledge of potential vocational opportunities for their children and hence would adjust their vocational aspirations accordingly. This line of reasoning assumes that parents who are aware of programs which offer the possibility of increased independence and self-reliance for their retarded children will express a preference for such program features. However, we found no evidence that that, in fact, happens. Several explanations are possible. One such possibility is that many parents remain unaware of alternative program options even though they may live in communities in which such alternatives are now available. Another possible explanation is that there is less difference than we assumed in the type and quality of programs offered for retarded persons in rural areas and small towns on the one hand as compared with program offerings available to city dwellers, on the other.

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Table 1

Means and Standard Deviations for Eight Independent Variables and One Dependent Variable

| | Independent variable | N | Mean | S.D. |
|---|---|---|---|---|
| 1. | Attitude toward work | 229 | 1.48 | 0.74 |
| 2. | Parent's educational level | 222 | 2.50 | 1.11 |
| 3. | Age of son or daughter | 233 | 3.21 | 0.92 |
| 4. | Sex of son or daughter | 230 | 1.60 | 0.49 |
| 5. | Agency size | 232 | 2.22 | 0.62 |
| 6. | Program type | 228 | 2.79 | 1.59 |
| 7. | Developmental level | 225 | 3.08 | 1.10 |
| 8. | Assistance required | 231 | 3.71 | 1.38 |
| 9. | Vocational aspiration | 190 | 10.43 | 1.74 |

## Table 2

### Matrix of Spearman Rho Correlation Coefficients for Variables Used in the Multiple Regression

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Attitude | --- | -.09 | -.06 | -.04 | .11 | .06 | -.27*** | -.31*** |
| 2. Education | 219 | - | -.15* | .06 | .23*** | -.19** | .08 | .08 |
| 3. Age | 229 | 222 | --- | -.08 | -.03 | -.15* | .07 | .11 |
| 4. Sex | 227 | 220 | 230 | --- | -.04 | .03 | .00 | .05 |
| 5. Agency size | 228 | 222 | 232 | 229 | --- | -.07 | .04 | .04 |
| 6. Program | 226 | 217 | 228 | 225 | 227 | --- | .02 | .04 |
| 7. Developmental level | 221 | 215 | 225 | 222 | 225 | 221 | --- | .63*** |
| 8. Assistance | 227 | 220 | 231 | 228 | 230 | 226 | 223 | --- |

(Upper left entries are the correlation coefficients; lower left entries are sample sizes.)

* $P < .05$
** $P < .01$
*** $P < .0005$

Table 3

Results of the Multiple Regression of Parent's Vocational Aspiration Scores Upon Eight Dependent Variables

| Independent Variables | Estimate of Beta | t | Prob. |
|---|---|---|---|
| 1. Parent's education level | 0.05 | 0.42 | .678 |
| 2. Attitude toward work | -0.57 | -2.96 | .004 |
| 3. Age of son or daughter | -0.35 | -2.46 | .015 |
| 4. Sex of son or daughter | -0.22 | -0.85 | .396 |
| 5. Program | -0.09 | -1.04 | .299 |
| 6. Developmental level | 0.45 | 3.04 | .003 |
| 7. Assistance required | 0.08 | 0.65 | .517 |
| 8. Agency size | -0.26 | -1.22 | .223 |

$F = 6.01$ (df = 8, 140) $p < .0001$ $R^2 = .26$

# HELPING YOUR CHILD WITH SEVERE DEVELOPMENTAL DISABILITIES RECEIVE VOCATIONAL TRAINING AND EMPLOYMENT: GUIDELINES FOR PARENTS

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# Abstract

This paper delineates a number of steps that parents of children with severe developmental disabilities can take to help their children receive appropriate voctional training and employment. Guidelines for improving vocational training and the potential for employment are provided for elementary, middle school, and high school aged children. As well, suggestions for things to do with a child and for a child with severe developmental disabilities are presented.

Guidelines for the elementary school level revolve around the training of self-care and daily living skills and the development of positive human relationships and good social skills. Middle school guidelines emphasize the beginning of specific vocational training on a variety of jobs in community-based settings. High school guidelines focus on the development of a formal, written transition plan specifying the movement from school to work and on the identification and training of an appropriate job for the student before graduation.

# Helping Your Child With Severe Developmental Disabilities Receive Vocational Training and Employment: Guidelines for Parents

As the first generation of students with handicaps served by Public Law 94-142 leave school, these citizens, as well as their families and professionals who have worked with them, are increasingly dismayed with the lack of opportunities and appropriate vocational services (Bruder, Pentecost, Pendleton, Cunningham, & Jordan, 1984). Families who have grown accustomed to services under a legally mandated and federally coordinated school service system learn that adult services such as vocational rehabilitation do not operate under entitlement (Elder, 1984). This is particularly true in terms of the provision of remunerative work, the expected outcome of school preparation. Parents, teachers, and school officials are often shocked to find that students with adequate job skills and appropriate social skills graduate and then sit at home for years (Hasazi, Preskill, Gordon, & Collins, 1982; Wehman & Kregel, 1984). On the other hand, rehabilitation service agencies may not know the vocational potential of certain graduates when formal transition planning has not been initiated by the school system. The bottom line is that 50 to 75% of all persons with disabilities are unemployed (U. S. Commission on Civil Rights, 1983), and the more severe the handicap, the less the likelihood that the person effected will ever be employed. A recent state-wide survey regarding persons who are mentally retarded showed that less than five percent of these individuals were competitive employed (Hill, Seyfarth, Orelove, Wehman, & Banks, 1985).

In fact, students who are severely developmentally disabled or those who may have been labeled as moderately, severely, or profoundly retarded, autistic, multiply handicapped, or severely physically handicapped, have typically not been placed on the caseloads of vocational rehabilitation agencies which traditionally have provided vocational services for less disabled individuals (Office of Special Education and Rehabilitative Services, 1984). The result is that most severely handicapped citizens usually end up in a day activity program which often does not provide paid employment opportunities, or they remain at home without any programming. This is both unfortunate and unnecessary since it has been repeatedly shown that persons with severe handicaps can work when an appropriate on-going, or supported employment training program is provided (Bellamy, Sowers, & Bourbeau, 1983; Wehman & Kregel, 1984).

In the late 1970's and 1980's a number of model vocational training and job placement and training programs demonstrated the ability of the adolescent and adult with severe handicaps to work in nonsheltered jobs. Wehman and his colleagues at Virginia Commonwealth University (Wehman, 1981) and Rusch and his colleagues (Rusch & Mithaug, 1980) in Illinois have shown the ability of citizens with moderate and severe handicaps to hold competitive jobs. Bellamy Horner, & Inman, 1979) have shown that even profoundly retarded persons can work in a specialized industrial setting which pays a decent wage and allows the worker to have regular contact with nonhandicapped persons. Other work alternatives such as mobile work crews and work stations in industry have also been used to successfully employ citizens with severe handicaps (Wehman & Kregel, 1984).

Unfortunately, the expectations and attitudes of parents of mentally retarded persons may not yet reflect the great progress which has been made in improving vocational services to disabled persons over the last decade. For instance, in the state of Virginia when parents were asked to indicate their degree of satisfaction with the current working conditions experienced by their son/daughter, the vast majority showed a preference to maintain conditions and services in their current form of delivery. This preference included: 1) to continue the payment of little or no wages; 2) to require low levels of work responsibility; 3) to maintain the current (often low) expectations for "adult-like" behavior; 4) to maintain the current (often low) degree of interactions with nonhandicapped persons; and 5) to continue the need for current (often high) levels of supervision and simple repetitive tasks (Hill et al., 1984).

As a parent of a child with severe developmental disabilities, you no longer need to settle for placement of your child into an adult day program or a sheltered workshp that pays no wage or a very small sum of money paid only on a piece-rate basis. Rather, you must begin to critically evaluate the services available to your child and to settle for nothing less than excellence. This article outlines some steps you can take during your child's school years to insure that he or she receives the proper kind of vocational training and job placement.

## Guidelines for Improving Vocational Training and Employment: Elementary School Level

Vocational training for elementary-age pupils who are developmentally disabled focuses on assisting them to develop: (1) self-care and daily living skills; (2) positive human relationships and good social skills at home and at school; (3) awareness of vocational opportunities at the upper grade levels and beyond (Clark, 1979; Herr & Cramer, 1984; Wehman & Pentecost, 1983).

### For Your Child...

1. Familiarize yourself with your state's regulations dealing with the education of handicapped children. Write to your representative in Congress and in your state legislature encouraging their commitment to legislation that will enhance the vocational training and employment opportunities for all

students. Find out about the policies of your local and state rehabilitation and developmental disabilities agencies regarding employment for the developmentally disabled. On a national level, employment has just recently become a priority for these agencies (Elder, 1984; Will, 1984), and there are now several government initiatives.

2. Work with your local schools to insure that vocational training and, in some cases, job placement is an integral part of your child's schooling. Be sure your child's current Individual Educational Program (IEP) specifically addresses employment training. Make sure that the IEP addresses any self-care skills such as eating, toileting, dressing, and grooming that your child does not have. These should be taught in the early school years so that middle and high school programs can lend more time to specific job training. Talk with school officials about employment training opportunities available in the upper grades and make sure that your child's teacher is preparing for the transition into these programs. See that students in special education programs are included in vocational education classes and special vocational-technical education training centers that many school systems now have.

3. Assign specific jobs/duties to your child around the home. Pay your child a small allowance based upon the successful completion of assigned tasks and insist that s/he perform his/her duties completely and on time. Encourage your child to manage his/her money and discuss how planning is essential to good money management. Encourage your child to make independent decisions and accept their consequences. Do not compare your child's efforts with the accomplishments of brothers, sisters, or friends, but rather have him or her continually improve upon his/her own performance.

4. Find out about successful school and adult training programs and

the variety of employment options that are now opening up for even profoundly handicapped citizens around the country. The list of resources included in this article should be helpful. Do not settle for the notion that your child cannot work!

With Your Child ...

1. Create opportunities for your child to learn about workers and what they do. Hummel and McDaniels (1979) encourage you to point out workers to your child when you go out in the community. Discuss what the worker is doing and encourage your child to think about what jobs s/he might like or not like. Share books, magazines, and pictures which introduce workers to your child. Be realistic about the types of jobs a retarded adult is likely to be successful in performing. Some jobs which have proved to be particularly good for disabled workers, including those who are severely handicapped, include: maid, orderly, janitor, auto mechanic helper, food service worker, porter, hand packer, laundry worker, farm laborer, and assembly line worker. Talk about the jobs performed by family members and friends. Discuss the rewards of working other than money, e.g. personal satisfaction, friendships, and independence.

2. Emphasize personal appearance, physical fitness, and good social and communication skills. Provide opportunities for daily physical exercise or activities so that your child will develop coordination, stamina, strength, and dexterity. Give your child the opportunity to practice independent eating, dressing, toileting, and grooming skills, and never do these things for the child. Encourage your child to develop acceptable social skills by having him/her interact with a wide-range of friends, relatives, peers who are not handicapped, and members of the community. It is essential that your son or daughter exhibit socially desirable behaviors and be able to relate with

other people if s/he is to hold a job.

Middle School Level

When a student who is severely developmentally disabled reaches the age of twelve or thirteen, a large portion of his or her school day should be devoted to specific vocational training on a variety of jobs in community-based settings (Bates & Pansofar, 1983). At this point, parents need to make sure that schools are providing community-based vocational training for at least several hours each day.

For Your Child...

1. Actively support the teacher's efforts to provide job training in community-based sites. Help the school identify training sites that are directly related to potential real jobs in the community. Such sites can be hotels, cafeterias, hospitals, and businesses in which family members or friends may work. At the very least, lobby for training in various school sites such as the grounds (grounds maintenance), cafeteria (food service worker), office (messenger), and overall building (janitor). Remember that training in a traditional classroom is the least desirable for students who are severely handicapped (Wilcox & Bellamy, 1982).

2. See that your child's IEP addresses specific vocational training in a variety of potential jobs. Do not settle for the notion of "pre-vocational" or "readiness" training that is supposedly related to specific job training. The only way your child will learn a real job is to practice these job skills in a real job setting.

3. Make sure that you know what job training is available for your child in the high school program. High school programs should include at least a half-day of job training and inclusion of some actual job placement and paid employment for students nearing graduation. There should also be

formal liaison between high school teachers and your local rehabilitative services agency. Find out whether this is occurring, and if not, insist that planning for transition from school to work begin to take place.

4. Get in touch with your local rehabilitation agency to find out about the training services and job possibilities available for your child. If the situation looks bleak in your community, insist that changes be made. Agencies have been mandated by federal governing bodies to increase services to citizens with severe handicaps.

5. Find work outside the home for your child to do during the summer, weekends, and after school. At this point, volunteer work is okay, for the essential factor is to get your child used to working. Having to follow a schedule, get to places punctually, and interact with people other than family members can never be practiced too much!

With Your Child...

1. Continue to work with your child on improving his/her appearance and physical fitness. Handicapped citizens are often turned down or let go from jobs because of their sloppy or dirty appearance or because of their supposed lack of initiative or laziness. Require your child to dress and maintain grooming habits like everyone else. Make sure that exercise is a regular part of each day to build strength and help control weight.

2. Require your child to complete household chores on a regular basis and provide an allowance only on the basis of correctly completing allotted chores. The value and importance of work can be reinforced at home by showing your child that everyone has certain important jobs to do, and that payment is based on doing the jobs correctly and on time. As a child gets older, you can assign more tasks and require that they be done in increasingly shorter periods of time. Complying with instructions, working at a fast

pace, and increasing work complexity are all important aspects of holding a job.

3. Continue to discuss the importance and benefits of work to your child. Point out workers who are performing jobs that he or she may be learning in school and discuss the benefits of holding a job such as wages, meeting new friends, and becoming an "independent adult."

4. Get your child into the community for leisure activities. Go to restaurants, movies, and community events. Take him or her to the grocery store to help with shopping and let your child help choose his or her own clothes. It is important that a person be able to behave properly in all settings and exposure is the best way to learn. Exposure is also necessary in terms of the general public accepting handicapped citizens as equal.

## High School Level

By the time your child reaches high school or is between ages 15 and 16, a major part of his or her school day should be devoted to vocational training. By graduation time a specific job or an adult training program should have been identified for him or her by a team of professionals and family members. As a parent you may have to see that educators and adult service providers are formally planning the transition of your child from school to work.

### For Your Child...

1. See that vocational training in specific jobs is built into your child's IEP. Teachers should have in mind for your child specific potential jobs based on both sheltered and competitive jobs available in the community. Insist that training for these jobs be conducted in community job settings as part of your child's IEP goals and objectives.

2. See that a transition team composed of yourself, the teacher, a

rehabilitation agency representative, and a local case manager from mental health/retardation services is formed to make plans for your child's employment after graduating. Advance planning in the form of written goals and objectives similar to an IEP is the best way to assure services for your child after graduation. Remember that adult services are not mandated by law as are school special education programs.

3. Encourage school personnel to find, place, and train your child in a job, full or part-time, that pays a wage while he/she is still in school. Because of the lack of mandated employment services for the severely handicapped and overload of clients on rehabilitation case managers, you should support job placement during the school years. It is easier for adult service providers to provide support services for someone already working than to have to start at the beginning.

4. Find out about all adult programs in your community and make a referral before graduation to have your child enter one where some sort of employment is offered if earlier employment cannot be secured. Of course, the most desirable option for your child is employment in a regular job that pays at or above minimum wage and decent benefits. If this is not attainable while your child is in school, see that s/he gets into a sheltered facility or adult program where the potential for employment exists. Such programs that offer a variety of employment options are the best. Many facilities are starting competitive work programs, work crews (groups of workers who are always supervised), or special industrial programs that pay some kind of wage and enable workers to spend time with nonhandicapped people. It is important to remember that your child is not automatically referred to such programs; however, you must take the lead on obtaining forms, making the referral, and ensuring that your child is on a waiting list, should this need arise.

With Your Child...

Continue to do all the things that you began while your child was in middle school. Promote exercise, good grooming, wise handling of money, and the completion of household chores. Allow your child to be as independent as possible and give him or her ample opportunities to get out into the community.

## Information Resources

The following places should be able to provide you with specific information regarding employment options for citizens who are severely developmentally disabled.

Center on Human Development
Division of Special Education and Rehabilitation
Clinical Services Building
College of Education
Eugene, Oregon 97403-1211

Center for Developmental Disabilities
499C Waterman Building
University of Vermont
Burlington, Vermont 05405

Rehabilitation Research and Training Center
Virginia Commonwealth University
1314 West Main Street
Richmond, Virginia 23284-0001

Office of Special Education and Rehabilitative Services
c/o Mrs. Carol Inman
U. S. Department of Education
Room 3132 Switzer Building
330 "C" Street S. W.
Washington, D. C. 20202

National Rehabilitation Information Center
4407 Eight Street, N. E.
Washington, D. C. 20017

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# ASSESSMENT OF PARENTAL CONCERNS REGARDING THE SKILL DEFICITS OF THEIR COMPETITIVELY EMPLOYED CHILD

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## Abstract

The supported work model has traditionally provided skill training for job related behaviors only. This report provides evidence suggesting that such a model should also encompass skill development for responses not specifically related to job performance. Parents and guardians of clients placed into competitive employment through a special project were administered a phone survey to identify skill deficits exhibited by the clients and perceived by the parents to be in need of remediation. Money related skills were most frequently cited by parents as the skill most in need of development. Additional community functioning skills were also reported. These results further support previous research suggesting that drastic changes often occur in the lives of mentally retarded people as they enter the competitive job market. Suggestions for the employment specialist and special educator are made in light of these results.

## Assessment of Parental Concerns Regarding the Skill Deficits of Their Competitively Employed Child

The employability of mentally retarded adults within the competitive sector of business has recently been demonstrated through the supported work model (Wehman, et al., 1984). This model provides for job placement, job-site training, ongoing assessment and follow-up services to insure the long-term employment of a chronically unemployable population. Curriculum focus of this model has typically centered on social/vocational survival skills (Rusch, 1979a), broadly delineated as those skills necessary to facilitate competitive employment.

Traditionally, competitive employment research has investigated strategies for increasing appropriate behaviors on the job site (Connis, 1979; Cuvo, Leaf & Borakove, 1978; Rusch, 1979b; Schutz, Jostes, Rusch & Lamson, 1980; Sowers, Rusch, Connis & Cummings, 1980; Stanford & Wehman, 1980), or reducing behaviors which might threaten employment (Karlan & Rusch, 1982; Kochany, Simpson, Hill, & Wehman, 1980; Rusch & Menchetti, 1981; Schutz, Rusch & Lamson, 1979). While these efforts have effectively demonstrated a technology for competitively employing the mentally retarded, they may be considered misrepresentative of the range of behavioral requirements resulting from competitive employment. For example, a variety of skills such as using public transportation, working independently, interacting with nonhandicapped individuals, or using industrial power equipment are typically nonfunctional in the sheltered work environments in which most mentally retarded people are employed. With the transition into integrated, community based work settings, individuals are required to engage in behaviors such as these which had never before been demanded of them. As such, future research and demonstration efforts must attend to the larger domain of community skills which gain functionality in competitive work settings.

The purpose of the present study was to identify those skill areas most in need of development among competitively employed mentally retarded workers. Toward this end, parents and guardians of clients served by the Rehabilitation Research and Training Center were surveyed to identify skill areas deemed in need of further training. The results highlight the need to broaden the scope of training by those individuals responsible for placing and maintaining persons with mental retardation in competitive employment.

## Method

Description of Data System. A telephone survey was administered to parents and guardians of all mentally retarded adults served by the Rehabilitation Research and Training Center in Richmond, Virginia. The purpose of this survey was to obtain demographic information on the client and his/her legal guardian. As such, information was solicited regarding client and guardian's educational history and vocational background, including previous employment, attendance at a sheltered workshop and type of school program attended (e.g. self-contained, integrated, transitional, etc.). Results from this demographic information are contained elsewhere in this text (See Hill, Hill, Wehman, Banks, Pendleton, & Britt, 1984).

In addition to obtaining client and parent demographics, the survey was designed to identify critical skill deficits exhibited by the clients. Nine skill domains were identified which represented responses deemed by the authors to be necessary for independent community functioning. These skill areas included: shopping, handling money, banking, using public transportation, using a telephone, telling time, eating out, engaging in conversation and maintaining a good appearance. As the survey was administered, parents were instructed to identify those skill areas they felt their son/daughter did not presently possess but which they were in need of acquiring. Parents were also asked to identify additional skill areas their son or daughter could benefit from acquiring but which were not included in the survey.

## Results

Seventy-one parents and guardians of mentally retarded adults in the Richmond Metropolitan area were contacted between January and March, 1984. This group was inclusive of all individuals placed into competitive employment by the Rehabilitation Research and Training Center who were currently working at the time of the survey.

All of the clients were diagnosed as mentally retarded, many with associated diagnoses of Down's Syndrome, cerebal palsy, and emotionally disturbed. Recent intelligence assessments of these individuals yielded a group mean I.Q. of 51 (range = 27-76). Seventy-seven percent of these clients resided at home with their natural parents at the time of the survey while the remaining 23 percent of the sample lived in alternative, community-based residential settings (e.g., group home, supervised apartment, etc.).

Sixty-three parents and/or guardians identified skill deficits for their son/daughter while parents of eight clients responded that their child was not in need of any skill programming. Specific skill deficits, as identified by the parents, were weighted heavily in the area of money related behaviors.

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Insert Table 1 About Here

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As can be seen by inspecting Table 1, the three most frequently cited skill deficits were shopping/purchasing, money handling/counting, and banking/budgeting skills. Collectively, 57% of the parents identified programming needs in these areas. Following money management skills, 33% and 32% of the parents indicated that their son/daughter were in need of conversational and appearance skill training, respectively. Finally, 22% of the parents surveyed identified programming needs for time telling and public transportation skills.

When parents were asked to identify additional skill deficits not included in the survey, 13% (8) identified programming needs for cooking. Other identified programming needs included training for table manners, stuttering, and slower speech.

## Discussion

The purpose of this study was to assess parent-identified skill deficits among mentally retarded adults engaged in competitive employment. The findings from this survey extend the arguments of Rusch (1983) and Wehman (1981) that individuals placed into competitive employment should receive training for social-vocational survival skills. In particular, the results suggest that instructional programs for these individuals should include money management, grooming, functional time-telling,and public transportation skills.

Currently, the technology for teaching many of these skills to mentally retarded persons is well developed (See Matson & McCartney, 1981; Snell, 1983; for thorough reviews). The development of money management skills, for example, has received a great deal of attention by Cuvo and his colleagues (Borakove & Cuvo, 1976; Cuvo, Veitch, Trace & Konke, 1978; Trace, Cuvo & Criswell, 1977). Unfortunately, much of this research has focused primarily upon counting small sums of money, typically less than a dollar, to make minor purchases. As mentally retarded individuals become gainfully employed and exposed to larger sums of money, researchers and clinicians alike must attend to the development of more complex and functional financial skills with this population such as depositing paychecks, paying bills, or purchasing groceries (c.f., Shafer, Hill, & Inge, 1984, this text). The importance of developing more functional financial skills with this population is underscored when one compares the vast differences in earning power that is associated with sheltered and competitive employment. Whitehead (1979), in a report to the Department of Labor, estimated the annual gross salary of mentally retarded employees in sheltered workshops to be $417. In contrast, a competitively employed individual, earning minimum wage of $3.35 per hour and working part-time at twenty hours per week would gross in excess of $3200 annually. As such, those responsible for job placement and training have an ethical responsibility to assure the acquisition of sound financial management skills by their clients. To date, unfortunately, this responsibility has been left largely to the discretion of the client's parents, residential counselor, or guardian. Such a practice fails to support the autonomy of this population, but only furthers the dependency relationship that mentally retarded people have been exposed to for too long.

A recent report by Wehman (Wehman, et al., 1984) also emphasizes the need for broadening the training scope of the supported work model. In their report, they assessed the residential status of many of the same clients whose parents were surveyed in this report. Following placement in competitive employment, major trends were reported toward more independent arrangements as 3 and 11 percent of the clients moved out of their natural homes and group homes, respectively. These individuals were reported to have moved to either supervised apartments (5%) or out on their own (9%). These results, in conjunction with those presented in this paper, further support the notion that drastic changes often occur in the lives of mentally retarded persons as they enter community based activities, such as competitive employment.

While the results of this study hold major implications for those involved in the supported work model process, comparable recommendations could be made to secondary level special educators. Specifically, educators must apply a more longitudinal perspective to the education of their students. Given the slow and often sporadic learning patterns the mentally retarded students exhibit, it is imperative that school curricula reflects the skills which will be required of these students later in life. As such, ecological analyses (Brown, et al., 1979) of the residential, vocational, or other settings in which students can be expected to function in must be completed to identify skill domains which then should be incorporated into the students' individual educational plan. Only through such coordinated programming efforts will we, as a field of professionals, provide mentally retarded people with a comprehensive and functional educational experience.

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## Table 1

## Parentally Identified Skill Deficits

Total Number of Respondents: 63

| Skill | Number of Parents Reporting Skill Deficit | Percentage |
|---|---|---|
| Shopping/Purchases | 38 | 60 |
| Money Handling/Counting | 34 | 54 |
| Banking/Budgeting | 36 | 57 |
| Public Transportation | 14 | 22 |
| Telephone Use | 04 | 6 |
| Time Telling | 14 | 22 |
| Order/Eat in Restaurant | 09 | 14 |
| Conversational/Social Skills | 21 | 33 |
| Appearance | 20 | 32 |
| Cooking | 08 | 13 |

## Section IV: Behavioral Training Strategies

It is clear that a supported work approach to competitive employment cannot work without competent on-site job coaches. These coaches need to be skilled behavioral trainers. The papers in this section address issues such as work rate, punctuality, banking skills, etc. The number of problems which can be presented by hard-to-train clients is endless; therefore, well designed behavioral intervention programs are essential. This section addresses some of those concerns.

# DEVELOPING APPROPRIATE SOCIAL-INTERPERSONAL SKILLS IN A MENTALLY RETARDED WORKER

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## Abstract

The development of appropriate social-vocational skills has been identified as a critical variable affecting the long-term competitive employment of mentally retarded workers. This study investigated a training procedure for improving three classes of social behavior in a moderately retarded individual working as a custodian in a large shopping mall. A combination of role-play, modeling and response feedback was systematically applied to accelerate appropriate responses to criticism, humor and seeking assistance. Target behavior selection, response evaluation, and generalization assessments were conducted with the aid of the subject's supervisor. Implications for future social-vocational training programs and role-play assessment are discussed.

Research on the competitive employment of mentally retarded persons has focused primarily upon the acquisition of job-specific behaviors such as task sequencing or increasing productivity (Connis, 1979; Cuvo, Leaf & Borakove, 1978; Rusch, 1979; White & Kennedy, 1980). Collectively, these efforts have demonstrated that socially significant job skills can be acquired by mentally retarded persons and once acquired, facilitate nonsheltered, gainful employment.

The advancement of the mentally retarded worker into competitive employment however, requires programming efforts in other domains as well. As Rusch (1979) and Wehman (1981) discuss, the competitive worker must also exhibit proficiency in a wide array of other domains, collectively identified as social-vocational survival skills. The ability to interact with and get along with one's employer and coworkers seems to be a particularly important skill for the mentally retarded employee to acquire. Evidence has recently identified issues of social incompetence to be the primary cause for job loss among this population (Greenspan & Schoultz, 1980). As such, it appears imperative that effective job training programs for mentally retarded persons provide training to develop effective social-interpersonal skills.

Research on the development of social competence among the mentally retarded in job settings has typically assessed the reduction of socially inappropriate behavior such as noncompliance (Rusch & Menchetti, 1981), topic repetition (Rusch, Weithers, Menchetti & Schutz, 1980), or verbal abuse (Schutz, Rusch & Lamson, 1979). To date, however, a paucity of studies have occured in which socially appropriate behavior has been the target of intervention (cf., Stanford & Wehman, 1980). Given the nature and demands of nonsheltered employment, particular types of social responding appear more important than others. The ability to handle negative performance feedback (i.e., criticism) appears to be one which the mentally retarded worker may encounter quite frequently (particularly during early employment) and which he/she may have had little or no exposure to in sheltered settings.

The amelioration of social behavior deficits among mentally retarded persons in environments other than work has typically resulted from the application of "package" interventions in which individual treatment components have not been assessed (Bangs, 1977; Bates, 1980; Perry & Cerreto, 1977; Zisfein & Rosen, 1979). Although component analysis have been lacking from these studies, a number of techniques have emerged as quite effective when applied with this population. Role-play and modeling, in particular, have been extensively used with this and other populations as a means for developing a wide array of socially appropriate behaviors. Bates (1980), for example, utilized a combination of role-play, modeling, verbal instruction and monetary reward to teach social skills to a group of eight mildly and moderately retarded subjects. Target skills consisted of handling criticism, engaging in small talk, asking for help and differing with others. Skill acquisition was evaluated utilizing a role-play assessment as well as conducting "naturalistic" probes in a community setting. Results indicated that the use of role-play assessments provided a reliable indicator of response acquisition and generalization.

The program characteristics of Bates' (1980) study provide an exemplary model for use with competitively employed individuals in need of social skill training. First, all situation role-play assessments were developed according to Goldfried and D'Zurilla's (1969) 3-step behavior analytic method of assessing social competence. This system consists of (1) situational analysis, (2) response enumeration, and (3) response evaluation. At each step, significant others in the subject's environment (eg, employers or coworkers) provide input, thereby assuring the content validity of the program. Second, the use of a role-play training strategy minimizes concerns of reactivity, denormalization or stigmatization (cf., Hill & Wehman, 1980; Wehman, 1981) since training sessions need not be conducted on the job site, in the presence of coworkers or supervisors. Finally, since the rating system was developed by consulting with significant others, the resultant indicator of response change may be considered to be socially valid, a particulary relevant issue in competitive employment research.

This study was designed to conduct a systematic replication (Sidman, 1963) of the program conducted by Bates (1980). Specifically, the application of a social skills development package which consisted of role play, modeling and response feedback was systematically applied to accelerate three classes of social behavior in a competitively employed, moderately retarded individual. Target behavior selection and response evaluation were socially validated as the subjects' employer identified minimal and maximal competencies for each skill area. Generalization was assessed to novel role play vignettes presented in the training setting as well on the job site.

## Method

### Subject

Brian, a 33 year old moderately retarded male was competitively employed as a janitor in a large shopping mall. Recent evaluations estimated Brian's I.Q. to be 46 (WAIS). He had obtained this position through the services of a unversity affiliated job placement and follow-up program (Wehman & Kregel, 1984; Wehman, et al., 1981). He had remained employed at this position for a period of 28 months. Previously, Brian had held two other jobs, each for approximately six months. The first position he resigned due to interpersonal difficulties with his coworkers whereas Brian was laid off from the second position due to financial cut backs. Brian's current responsibilities included cleaning restrooms, vacuuming carpets, sweeping and mopping floors and emptying trash cans. Although job proficiency remained within acceptable standards, the supervisor had indicated dissatisfaction in Brian's ability to get along with others. At a subsequent meeting with the supervisor, three general areas were identified in which Brian was displaying marked difficulty. These areas consisted of handling criticism from the supervisor or coworkers, taking a joke or sarcastic remark from coworkers, and soliciting assistance.

## Setting

All baseline probe, training, and post-training probe sessions were conducted at the job site immediately after work. Three locations, relatively isolated from coworkers or customers, were utilized for all sessions. These included a conference room within the mall administrative offices, a community resource room and a service hallway. Settings were selected according to availability since many times the conference room or community room would be in use.

## Dependent Measures

The primary measure of social skills consisted of a role play assessment in which situations were presented which typified problematic situations for Brian. Following Goldfried & D'Zurilla's (1969) guidelines for a behavioral analytic assessment of social competence, significant others (eg, the supervisor) were surveyed to identify common problem situations, common responses and responses considered most appropriate. As a result of this survey, six situations were generated for each problem area, resulting in a total of 18 role play assessments. Each of these situations included a detailed description of a commonly encountered social situation, followed by the phrase "you say" to elicit a verbal response from Brian. For example, situation one from seeking assistance was: "You're out vacuuming when the belt breaks and the vacuum stops, you find Bill who is busy talking to someone, you say...".

For each problem area, a six-point content effectiveness (Bates, 1980) rating scale was developed. This scale provided quantitative values to Brian's social responses, ranging from least appropriate responses (receiving a "0" score) to most appropriate responses (receiving a "5" score), as determined by Brian's supervisor and job coordinator. Detailed descriptions of the target behaviors and rating system are found in Table 1.

Reliability checks were conducted on 27 percent of all training and probe sessions by a second observer independently scoring the content effectiveness of Brian's responses. Reliability estimates were computed by summing the number of agreements of content effectiveness scores per catagory, dividing that figure by the total number of content effectiveness scores possible and multiplying by 100. Resulting relaibility estimates averaged 93% for sarcasm/humor, 100% for handling criticism, and 100% for seeking assistance.

Generalization Assessments. At the completion of all training, two assessments of generalization were conducted. The first consisted of presenting novel situations in the training setting. These consisted of three new situations generated for each problem area presented in a random order. The second assessment of generalization consisted of Brian's supervisor "setting up" some of the original training situations at various locations within the mall. For these assessments, the job trainer nor experimenter were present, but called the supervisor at the end of the work day to ascertain how Brian had responded. Only one assessment per problem area was presented, with no more than one per day being conducted.

Follow-Up Probes. Six months following the completion of training, two follow-up probes were conducted. These probes were identical in nature to those conducted prior to training (see Baseline, below).

### General Training Procedures

Probe and training sessions, lasting approximately forty-five minutes were conducted 3 days per week. These sessions, which were videotaped for reliability scoring, were attended by the trainer and Brian only.

*Baseline*. During baseline assessments, all situations for the three problem areas were presented in a random order. During these assessments, Brian was asked to respond as he normally would. Response feedback was not presented during these sessions although Brian was praised for his participation. Three baseline assessment sessions were conducted before training began.

*Training*. A combination of modeling and role-play training was sequentially applied to each problem area to accelerate the occurrence of appropriate social responses during the role play assessments. Training was first applied to humor, followed by criticism and seeking assistance, respectively.

Each training session began with an assessment of responding to all situations within the problem area currently under training. No feedback was provided for responses during this probe. Following this probe, the trainer would identify the problem area currently under training (eg., "Today we're going to talk about how to take a joke"). The trainer would then describe one of the training situations, model appropriate responding to the situation and verbally describe the appropriate responses. Brian would then practice responding to the same situation for at least five trials while receiving prompts and feedback from the trainer. Each session was terminated when Brian engaged in all three target behaviors independently for one trial.

Training for each problem area continued until Brian's responses during the initial probe which preceeded each session averaged a content effectiveness score of four or better for two consecutive sessions. When Brian's responding to situations within a problem area had maintained at improved levels, training for that area was terminated and a series of bes, comparable to those carried out during baseline were conducted. Following these additional assessments, training was then implemented for the next problem area in a manner similar to that just described.

Experimental Design. This investigation utilized a multiple-probe design (Horner & Baer, 1977) to demonstrate the effect of role-play training upon social responding to role-play assessments. Accordingly, probes across all three classes of social behavior were conducted prior to any training. During training, probes were discontinued on the two classes of behavior not currently being trained. At the completion of training for problem area, a series of additional probes across all three were again conducted, thereby establishing an extending baseline for each area.

## Results

The results of the multiple-probe analysis of role-play training is presented in Figure 1. Mean content effectiveness scores are plotted along the axis with role-play assessment sessions plotted along the abcissa; training data are not included.

Prior to training, responding to each of the three problem areas was at or below the supervisor's minimal acceptable standard (in all cases a content effectiveness score of 2). For example, three baseline assessments for humor yielded a mean score of 1.9, six baseline assessments of criticism indicated a mean content effectiveness score of 1.4, nine assessments for seeking assistance yielded a mean baseline score of 2.

In all instances, the effect of the training package was immediate and dramatic, although training time varied from one class of responding to another. For example, 14, 12, and 4 training sessions were conducted for humor, criticism and seeking assistance, respectively. While training time did vary from one class of social responding to another, the impact of training upon responding to each class did not. Following training for humor, Brian's content effectiveness scores during the seven post-training assessment probes averaged 4.4 (range=4.5-3.75), showing a slight downward trend but well within the range of supervisor acceptability. Similar results were obtained for criticism, as content effectivenss scores for this class averaged 3.9 (range=4.7-3.5) during 5 post-training assessment probes. Finally, 4 post-training assessment probes on seeking assistance yielded an average content effectiveness score of 4.5 (range =5-3.75).

Generalization probes to novel situations within the role-play environment indicated at least partial generalization. Derived content effectiveness scores were 4.3, 3.6, and 3.3, for humor, criticism and seeking assistance, respectively. In comparison, generalization probes conducted by the employer yielded slightly lower content effectiveness of 2, 3, and 4 for the three classes, respectively. Additionally, follow-up probes conducted six months after training had been completed, indicated response maintenance, as Brian's mean content effectiveness scores for these probes were 4.7, 3.5, and 4.2 for humor, criticism, and seeking assistance, respectively.

## Discussion

The primary purpose of this investigation was to demonstrate the application of a complex social skills training program to maintain the competitive employment status of a mentally retarded adult. In as much as the subject of this study, Brian, is still competitively employed, the primary objective has been successfully attained. With regard to issues of research, the present study holds a number of important implications for future competitive employment investigations.

The incorporation of significant others into the process of program evaluation has been advocated as a means of assuring that socially valid research is carried out (Kazdin, 1977; Kazdin & Matson, 1981; Wolf, 1978). In the present study, Brian's supervisor was integrally involved in identifying the problem, developing the evaluation scale and actually conducting generalization assessments. Whereas the former two functions are common components of effective job analyses (see Wehman, 1981 for thorough discussion), use of the supervisor to conduct naturalistic probes represents an innovative application in a work setting. To date, only a handful of studies have been reported in which employers or coworkers have been actively involved in collecting data (Rusch, 1983; Rusch, et al., 1980; White & Rusch, 1983). Given the reactive changes in the behavior of handicapped workers when observed (see Fischer, Wehman, & Young, 1980; Rusch, Menchetti, Crouch, Riva, Morgan & Agran, 1984), the collection of observational information by supervisors, coworkers, or others typically present in the job setting seems to warrant further application. In addition to reducing reactive effects, participant observers such as supervisors also reduce the follow-up costs associated with job placement and follow-up (Hill & Wehman, 1983; Shafer, in press).

A second aspect of this study which bears implications for future research is the treatment package itself. The role-play/modeling program utilized in this study represents a simplified version of the intervention developed by Bates (1980). Although major differences do exist between Bates (1980) package and the one utilized in this study, the key components of modeling and behavioral rehearsal are found in both. These elements appear particularly critical for developing such complex behavior as social responding among mentally retarded people. In particular, the presentation of highly relevant situations with an opportunity for repeated practice has been suggested to enhance the likelihood of altering the subject's actual behavior (Bates, 1980; Eisler, 1977). In this study, Brian was presented with situations identified by his employer to be problematic and was provided with opportunities to practice responding to these situations while receiving feedback. This approach was effective in facilitating improvements in responding to the role play assessments.

The observed improvements in Brian's responding to the role play assessments were subsequently shown to generalize to novel situations and to a lesser extent, to more natural situations. Probes conducted on novel situations were comparable to the probing procedure employed by Bates (1980) who assessed generalized responding at each training session. Such a detailed analysis was not feasible in this study, due, in part, to restraints of subject availability and trainer time. With regard to the employer administered probes, the data from this study indicate that socially valid response changes may occur from role-play interventions. Given the lower response scores obtained during the employer probes, future research should be directed, as suggested by Bates (1980), to assess the psychometric validity of role play assessments.

In conclusion, this study was designed to systematically increase the appropriate social responses of a competitively employed worker to three problematic situations. The present results indicate that effective technologies for altering behavior may be applied competitive work settings, thereby maintaining the employment status of the handicapped worker in an effective and unobtrusive manner.

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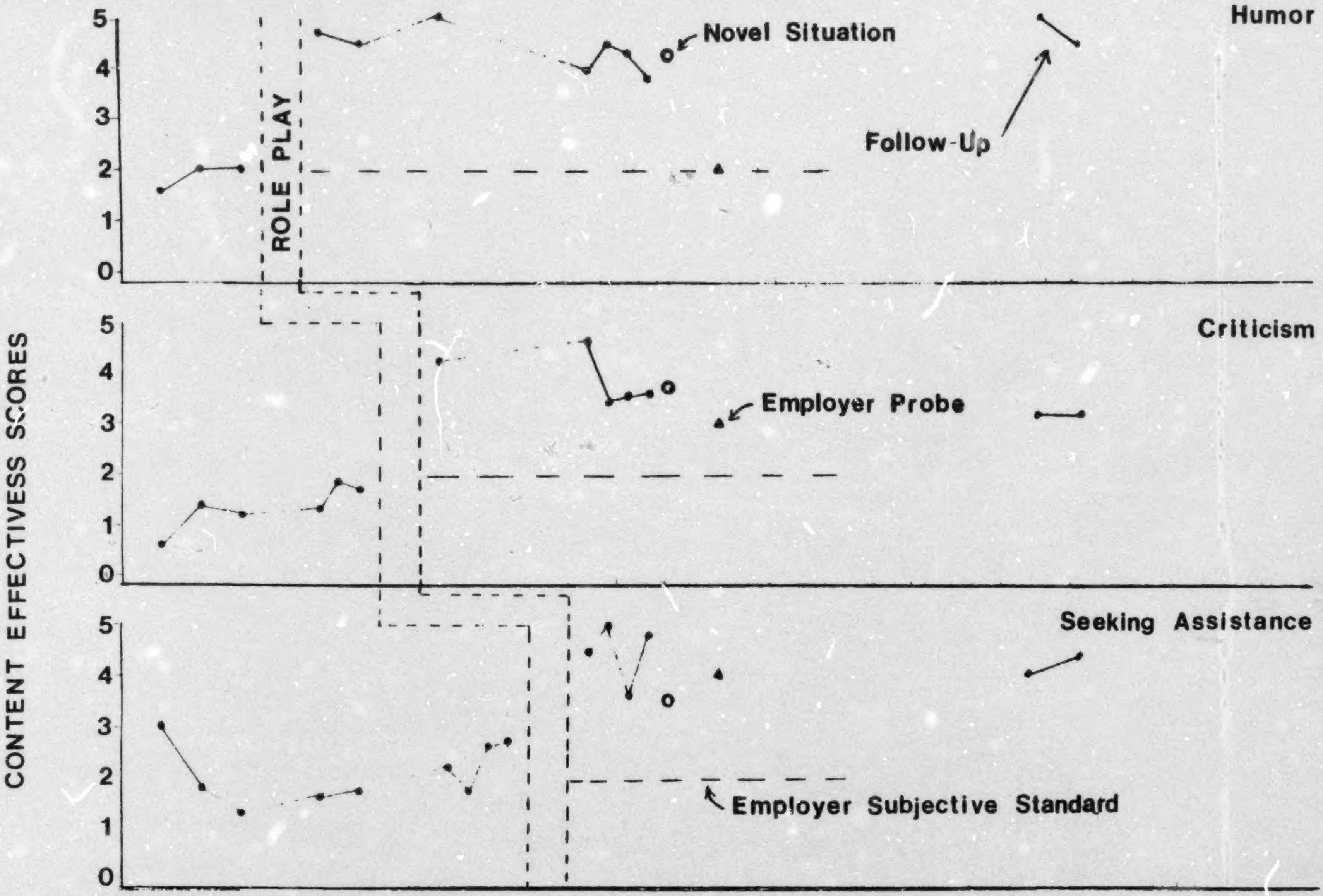
Table 1

RESPONSE SPECIFICATION AND CONTENT EFFECTIVENESS SCORES

| PROBLEM AREA | TARGET BEHAVIORS | EXAMPLE | CONTENT EFFECTIVENESS SCORE |
|---|---|---|---|
| Sarcasm/Humor | Verifies statement was humorous, provides humorous retort and makes truth/correcting statement | "Are you kidding? Your face looks like a bad excuse for living, actually, I like this hair cut". | 5 |
| | Verifies statement was humorous, makes truth/correcting statement | "You're joking, right?", I like these shoes". | 4 |
| | Humorous retort with truth correcting statement *or* verification of humor | ________________ | 3 |
| | Verification of humor, or humorous retort, *or* truth/correcting statement | ________________ | 2 |
| | Says nothing or says something irrelevant | ________________ | 1 |
| | Antagonistic comment | ________________ | 0 |
| Handling Criticism | Apologizes, provides excuse for performance and makes promise for improvement | "Gee Bill, I'm sorry but that stuff is real tough to get off, I'll do a better job this time". | 5 |
| | Apologizes, makes promise for improvement | "Gee, I'm sorry about that, I'll pay more attention next time you're waxing". | 4 |
| | Apologizes, provides excuse | "Sorry about that, this stuff is real hard to get off". | 3 |
| | Apologize alone or promise for improvement | ________________ | 2 |
| | Excuse alone or irrelevant comment | ________________ | 1 |
| | Antagonistic comment | ________________ | 0 |
| Seeking Assistance | Gets the persons attentions, makes request for assistance in question form, specifying nature of request | "Excuse me Bill, can you tell me where the mopheads are?" | 5 |
| | Same as above, but not in question form | "Pardon me, I don't know how to oil the hinges" | 4 |
| | Makes request for assistance with or without question | "How do you get this gum up?" | 3 |
| | General request for assistance without specification | "I need help". | 2 |
| | Irrelevant comment, says nothing | ________________ | 1 |
| | Antagonistic comment | ________________ | 0 |

# Figure Caption

Figure 1. Mean content effectiveness scores during role play assessments.


CONTENT EFFECTIVESS SCORES
ROLE PLAY
Humor
Novel Situation
Follow-Up
Criticism
Employer Probe
Seeking Assistance
Employer Subjective Standard
0
1
2
3
4
5

# AUTOMATED BANKING SERVICES FOR MENTALLY RETARDED PERSONS

## A PILOT STUDY

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# Abstract

This study evaluated a simulation training program to teach bank depositing skills to a moderately mentally retarded person. Based on a task analysis of specific skills, the subject was instructed to operate an automated banking machine. The skills of accessing the machine, conducting the transaction, and terminating the transaction were sequentially taught using a simulated mock-up of the automated bankmachine. Generalization probes in the natural environment were conducted before, during, and after training. Results of a multiple-probe design across target behaviors indicated that up to six months after training, the subject maintained appropriate banking skills using an actual automated banking machine. These findings further support the utility of carefully designed simulated training programs to teach community survival skills to mentally retarded persons.

Competitive employment for individuals who are mentally retarded represents a significant departure from the typical experiences and expectations of this population. Such individuals are now exposed to social settings with a majority of nonhandicapped persons, expected to perform complex vocational tasks independently, and required to engage in a host of behaviors which indirectly facilitate long-term employment (eg., maintain a neat appearance, punctually arrive at work, etc.).

In addition to the increased vocational demands placed upon the mentally retarded worker, competitive employment also represents new demands outside of the work setting. Money management, for example, takes on new meaning with competitive employment. Individuals placed into full-time competitive employment are exposed to annual salaries in excess of $7,500. In contrast, individuals employed in sheltered workshops typically earn no more than $400 annually (Whitehead, 1979 ). Given this gross discrepancy in earning power, it appears imperative that money management training be incorporated into the curricula of job placement and transitional vocational programs. Failure to do so continues to perpetuate the dependency of mentally retarded individuals on society which placement into competitive employment is designed to alleviate.

To date, researchers have focused their attention upon training programs designed to teach such skills as: coin equivalency (Trace, Cuvo, & Criswell, 1977), coin summation (Borakove & Cuvo, 1976; Lowe & Cuvo, 1976) and change computation (Cuvo, Veitch, Trace and Konke, 1978). Typically these skills have been taught in isolation, that is, not within the context of a community setting with little or no reference to the natural environment. The ability to engage in skills such as these greatly enhances an individual's ability to independently use various community based services. For example, riding public transportation, eating in restaurants and making minor purchases are all greatly facilitated with the acquisition of these skills.

In addition to the use of coins, money management also encompasses the use of paper money, the use of commercial banking services, and the ability to maintain a financial budget. Unfortunately, little effort has been directed toward the development of these more complex skills. The purpose of this study was to develop and evaluate a training procedure to teach banking skills to a mentally retarded subject. Specifically, the utilization of automated banking services to make deposits into a personal account was evaluated.

The utilization of automated banking services appear to be a superior alternative to traditional banking services for a variety of reasons. First, language and/or social skills are not required to operate these machines making them ideal for use by the behaviorally deficient client. Secondly, in contrast to banking conducted with a teller, automated banking machines consistently require the same responses to be performed in the same order. As a result, skill performance on one machine has a greater likelihood of transferring to a similar machine in a different locality. Finally, automated banking services are available twenty-four hours a day, thus increasing the likelihood of performance by individuals who are employed during typical banking hours.

## Method

### Subject

Allan, a twenty-five year old with a diagnosis of Down's Syndrome participated in this program. Recent evaluations had indicated his functioning level to be in the moderate range of mental retardation (Full scale I.Q. = 46, WAIS). Academically, Allan displays simple counting and addition skills, however, more complex math skills are not evidenced. Additionally, he has a sight word vocabulary of approximately 50-100 words.

Currently, Allan is competitively employed part time as a dishwasher at a restaurant. He lives at home with his mother who strongly supports his continued independence. As such, Allan regularly prepares his own meals, travels to and from work independently, and often performs chores around the house. Prior to his participation in this program Allan's mother performed all of his needed banking transactions.

Allan was selected for participation in this study on the basis of: (1) willingness to participate, (2) parental permission for him to maintain a checking account (necessary to use the automated banking system), and (3), ability to discriminate numerals. Allan had no previous experience utilizing the automated banking system.

## Setting and Apparatus

*Bank*. Generalization probe sessions were conducted at an automated bank machine located at a bank within walking distance of Allan's place of employment. It consisted of a 6.5 x 4.5 inch video screen for messages and instructions, ten number buttons, four "decision" buttons, a "cancel" button, and four slots. Each number button had a pri[illegible] numeral, and was used for entry of a personal identification number (PIN) and for entry of deposit and/or withdrawal amounts. The four "decision" buttons which were located along the right-hand side of the video screen were used for responding to the video screen instructions. The slots were used for inserting a bankcard, entering deposit material, and retrieving withdrawals and bank receipts.- A drawing of the automated bankmachine is depicted in Figure 1.

*Home*. Training sessions were conducted 3-4 days per week in the living room of Allan's home. A plywood replica, constructed to approximate the automated bankmachine, was used during all training sessions. A number of adaptations were used to make the replica both inexpensive as well as portable. For example, in place of the video screen found on the bank machine, a preprinted continuous loop paper, depicting each videoscreen message, was utilized and manually manipulated by the trainer. Additionally, in place of the decision and number buttons, adhesive backed labels, cut to the approximate size of the buttons were used. Slots for the bankcard receipt, deposit and withdrawal materials were all located in approximately the same position as found on the bankmachine.

In order to simulate the operations of the bankmachine, the trainer would manually pull materials from the back side of the replica, once they had been inserted into the correct slot by Allan. In addition, the trainer manually ejected the receipt and bankcard at the end of the transaction. Additional training materials included simulated paychecks, blank receipts and envelopes obtained from the bank, and Allan's actual bankcard.

Home training procedure. All training sessions were conducted at Allan's home and involved use of the simulated bank machine and other training material previously described. Check amounts during these sessions approximated Allan's acutal pay, but were randomly determined. Each training session, which lasted approximately 30 minutes, was comprised of a training probe, trainer modeling of the component being trained, followed by five training trials.

Training probes consisted of a single trial assessment of skill performance within the component currently being trained. Based upon this probe, subsequent training trials were focused on all steps up to, and including the first step which was not performed correctly. During these probes, Allan was given a training check and was instructed to deposit it. No additional instructions, prompts, or response specific feedback were provided. At the completion of the probe, Allan was provided with general praise.

Following the training probe, the trainer modeled and verbally described the entire skill component currently being trained. Verbal description consisted of response specific statements intended to guide performance (e.g. "The first thing I do is put my card into the machine. I hold my card just like this, with this black strip on the bottom right here"). After modeling the entire component, the trainer would then ask Allan if he had any questions before beginning the training trials.

Each training trial was initiated by handing Allan a training check and instructing him to deposit it. Allan was then required to perform all of the steps up to, and including the step identified from the training probe as the training step. For example, if Allan had correctly performed steps 1:1-1:4 during the training probe, subsequent training trials would consist of these four steps plus step 1:5, which was the first step performed incorrectly. Upon correct performance of this step during a training trial, Allan was provided with descriptive praise (e.g., "Good job! you put the card in the right way") and the trial was terminated. Incorrect responses resulted in termination of the trial followed by descriptive feedback (e.g., "No, you put the card in the wrong way") and a remedial trial of the incorrect step. During a remedial trial, Allan was instructed to perform the step (e.g. "Put your card into the machine") and prompted if necessary using a least prompting procedure. Table 2 delineates the various prompts utilized for each step. Prompted remedial trials continued until Allan independently performed the step. Correct performance of a remedial trial resulted in descriptive praise, followed by the next training trial.

Training criterion was set at 100% correct performance of all steps within a component across two consecutive training probes. If Allan correctly performed all of the steps within a component on a training probe, the session was terminated and no additional training was provided. Upon attainment of the training criterion, a series of generalization probes, using the actual bankmachine, were conducted on subsequent separate days.

Generalization probes. Allan's behavior was observed at the automated bank machine before, during, and after training. A probe consisted of giving Allan an actual paycheck and instructing him to deposit it. Except for initial instructions, no trainer-subject interaction occurred until Allan walked away from the machine, or the time limit for making the deposit (10 minutes) had expired. The trainer and persons serving as observers located themselves well away from the bankmachine (25-75 ft), but within viewing distance. Observers were prepared to intervene if Allan engaged in a response which could result in the paycheck being accepted by the machine, but not credited to his account. At no time, however, was this necessary. Correct responses were prompted if absolutely necessary (i.e., if failure to emit a response would preclude testing of subsequent skills in the chain). For example, if Allan failed to insert his card correctly, an observer would intervene and properly insert the card. No feedback or instruction, however, was provided.

Maintenance probes. Six months following the termination of training a series of three follow-up maintenance probes were conducted. In contrast to the generalization probes, all observations were made unobtrusively (e.g., from cars parked within viewing distance of the bankmachine) and no interaction with Allan transpired.

Reliability. Independent observations were made during training sessions and generalization probes by undergraduate student assistants. At the completion of an observation, trainer and observer records were compared on response-by-response basis. Inter-observer reliability was calculated by dividing the number of agreements plus disagreements and multiplying by 100. An agreement was scored if both observers recorded the same response as being correctly and independently performed. Utilizing this formula, inter-observer reliability estimates were calculated for: (1) occurrences of correct responses, (2) nonoccurrences of correct responses, and (3) occurrences plus nonocurrences.

Reliability checks were conducted 33% of all home training sessions and yielded mean scores of 98%, 95%, and 99% for occurrence, nonoccurence, and total reliability, respectively. Similarly, reliability checks conducted on 50% of the generalization and maintenance probes yielded scores of 98%, 92%, and 98%.

## Experimental Design

The design for this study was a multiple probe design across target behaviors (Horner & Baer, 1978). Prior to training, an initial generalization probe was conducted for all three component skills. No additional probing of components 2 or 3 were conducted until training of component 1 had been completed. At such time, all three components were probed on the bank machine, followed by an additional "true baseline" probe of component 2. Due to the slight increase in correct responding for component 2 on probe session 3, an additional probe of components 1 and 2 were conducted prior to component 2 training. Upon completion of component 2 training, probes of components 1 and 2 only were conducted until generalized responding of component 2 occured. All three components were then probed prior to training component 3. Due again to an increase in responding prior to training, additional probes were conducted to assure stable response rates. Upon completion of component 3 training, a series of follow-up probes were conducted at one week intervals and again six months following training to assess response maintenance.

## Results

Presented in Figure 2 are the results of the generalization probes for components 1, 2, and 3 prior to, and following simulation training. Percentage of correct independent performance is plotted along the axis with probe sessions plotted along the abscissa.

Baseline probes for components 1 and 2 indicated insufficient skill performance to complete a transaction. Performance for component 1 during the single baseline probe was 50% as Allan engaged in four of the eight steps, but did so in an incorrect order. Specifically, Allan removed and opened his wallet (Step 2), removed his check and bankcard (Steps 3 & 5), and then approached within 2 feet of the bank machine (Step 1). None of the steps requiring interaction with the mach-machine, such as inserting the bankcard or PIN however, were performed correctly.

Three simulation training sessions were required for component 1. Allan's performance during the training probes which preceeded each session averaged 75% (range 25% - 100%). Subsequent performance during generalization probes averaged 100%, indicating that simulation training had been effective. Performance of component 2, however, remained relatively unchanged, averaging 6.5% (range 0-25%) during four baseline probe sessions as Allan performed correctly the first two steps of this component on one occassion.

Five simulation training sessions were initially conducted for component 2, with training probe performance during these sessions averaging 51% (range 0 - 100%). Since performance for training sessions 4 and 5 were 100%, a generalization probe was conducted. Performance during this probe maintained at 100% for component 1 whereas component 2 performance was 12.5%. The reason for this poor performance became readily apparent as the video screen displays had been slightly altered, requiring responses to different "decision" buttons. Specifically, the selections for step 2 (identifying checking account) had all been moved up, requiring that the first, rather than the second button be pressed. Allan, however, continued to press the second button, suggesting that simulation training had identified positional cues as the relevant stimulus.

In order to assure that Allan was attending to the words displayed on the videoscreen as the relevant stimuli, additional simulation training was conducted. During these four additional training sessions, the placement of all key decision words were randomly altered such that they corresponded with different decision buttons on each trial. Transfer of stimulus control was quickly evidenced as this poor performance became readily apparent as the video screen displays had been slightly altered, requiring responses to different "decision" buttons. Specifically, the selections for step 2 (identifying checking account) had all been moved up, requiring that the first, rather than the second button be pressed. Allan, however, continued to press the second button, suggesting that simulation training had identified positional cues as the relevant stimulus.

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Simulation training was reimplemented for component 2 to improve Allan's response speed and to teach him to request more time. During four additional simulation training sessions, Allan was verbally prompted to respond quickly. If he exceeded the 30 second response limit, the trainer inserted a message display asking if more time was needed and verbally prompted Allan to respond accordingly by pressing the "decision button" corresponding to the "yes" display.

The effect of this additional training was dramatic, as Allan's performance during training probes increased from 50% to 100% for the two final training probes.

Following additional training for component 2, performance during generalization probes increased to, and maintained at 100% for ten additional probes. Performance for component 1 remained high, ranging between 100% and 88%, as Allan intermittently failed to replace his wallet in his pocket.

Generalization performance of component 3 was initially 0 following component 2 training, but increased and maintained at 83% for three pre-training probes. Specifically, Allan inadvertently pressed the "Cancel" button on probe session ten which effected the same response of the bankmachine (e.g., terminated the transaction) as did responding to the video-screen display that no additional transactions were desired. As a result of pressing the cancel button, the receipt and bankcard were ejected from the machine, requiring Allan to simply retrieve these materials and replace them in his wallet.

In order to insure that Allan had been correctly trained to utilize the automated banking system, skill training was implemented for component 3. Allan quickly learned to exit the machine in the correct manner, requiring only 3 sessions to meet acquisition criterion. Subsequent performance during six post-training generalization probes, remained high, averaging 97% (range = 83% - 100%).

Results from the maintenance probes conducted six months following training indicated sufficient skill maintenance. Specifically, Allan was observed to engage in 83% of the steps for component 1 and 100% of components' 2 and 3 steps. With regard to component 1, Allan failed to replace his wallet in his pocket, but placed it on the counter directly in front of him.

## Discussion

The purpose of this study was to evaluate a program designed to teach automated banking skills to a mentally retarded client. The results obtained indicate that: a) the simulated training procedure was effective in developing appropriate banking skills, b) these increases generalized to the natural environment, and c) skill performance maintained six months following the termination of training.

The preparation of severely handicapped students through simulated teaching strategies, as characterized by this study, has recently received a great deal of criticism (Brown, Nietupski, & Hamre-Nietupski, 1976; Brown, et al, 1977, Brown, et al, 1979). Typically this criticism has been supported along two fronts. One such criticism is that simulated teaching strategies do not allow for maximum community based participation in the least restrictive environment. Additionally, these strategies have been criticized due to their often implicit assumption that skills taught under such conditions would automatically transfer to the natural environment. One need not look far to find a wealth of studies attesting to the problems of producing generalizable and durable changes in the response patterns of severely handicapped students.

In spite of these criticisms, simulated training programs continue to permeate most training efforts for this population ( Wilcox & Bellamy, 1982) and has been supported by others for a variety of reasons (Neef, Iwata, & Page, 1978; Sowers, Rusch, & Hudson, 1979). Simulated training was selected for this program for a variety of reasons. First, repeated practice on the actual bank-machine was not feasible due to its frequent use by other customers as well as the inability to repeat many of the steps. For example, depositing a paycheck can only be practiced once. Secondly, due to the inherent security systems of the bankmachine, repeated errors as encountered during the training sessions, can often result in serious consequences. As previously mentioned, four consecutive incorrect PIN entries will result in the bankmachine terminating a transaction and keeping the customers' bank card. Finally, due to the highly visible location of the bankmachine and its proximity to Allan's place of employment, simulated training was selected to minimize the stigmatization which could result from community based training.

The results obtained in this study attests to the care which must be taken when teaching under simulated conditions. For example, twice during the training of component 2, generalization probes on the automated bankmachine indicated minimal transfer. In both instances, discrepancies between training and probe environments accounts for the lack of generalization. Initially, generalization did not occur because of altered video-screen depictions which had occurred sometime during the training of this component. The continued lack of generalization, which occurred following retraining for the altered video displays, however, was the function of an incomplete task analysis. Although all responses had been carefully scrutinized, accompanying time dimensions had not been attended to. As a result, Allan independently performed all need responses; but failed to do so within an acceptable amount of time. Following additional simulation training, which required Allan to respond within specific time parameters, generalized responding was observed on the automated bankmachine.

Following generalized responding of component 2, increases in component 3 responding was observed to occur, prior to systematic training. Methodologically, this situation weakens the experimental control of the study. As with multiple baseline designs, the multiple probe design demonstrates experimental control as changes in the dependent variable(s) occur when and only when the independent assumption that skills taught under such conditions would automatically transfer to the natural environment. One need not look far to find a wealth of studies attesting to the problems of producing generalizable and durable changes in the response patterns of severely handicapped students.

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In this investigation, the untrained increase in component 3 responding appear likely to be the result of facilitative effects from previous training. This component, in contrast to the preceeding two components, requires a minimal amount of customer initiated activity. For example, to initiate this component, the user need only make one response by indicating that no other transactions are desired. Thereafter, all responses are physically prompted by the bankmachine and consist only of removing the receipt and bankcard. In comparison, component 1 required the customer to make two initiating responses by inserting the bankcard and entering the PIN; component 2 required five such responses which consisted of identifying the type of transaction, the account to be used, the amount of the deposit, verification of the deposit amount, and insertion of the deposit material. Upon the successful completion of component 2, on probe session ten, Allan pressed the

"Cancel" button, which functioned in the same manner as indicating that no additional transactions were needed.

The results of this investigation should be treated as pilot data, in need of additional replication. Further efforts however, need to attend to the patterns encountered in this endeavor, particularly in regard to the difficulties in arranging simulated environments which maximally reflect the response and stimulus variations to be encountered in the natural environment. Additionally, future efforts need to be directed toward the development of more complex money management skills which include balancing a check book, making withdrawals, etc. As mentally retarded individuals continue to move into competitive employment and enjoy the financial ramifications of such employment, these efforts become critical to the independent and community based functioning of this population.

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Table 1

Component Analysis

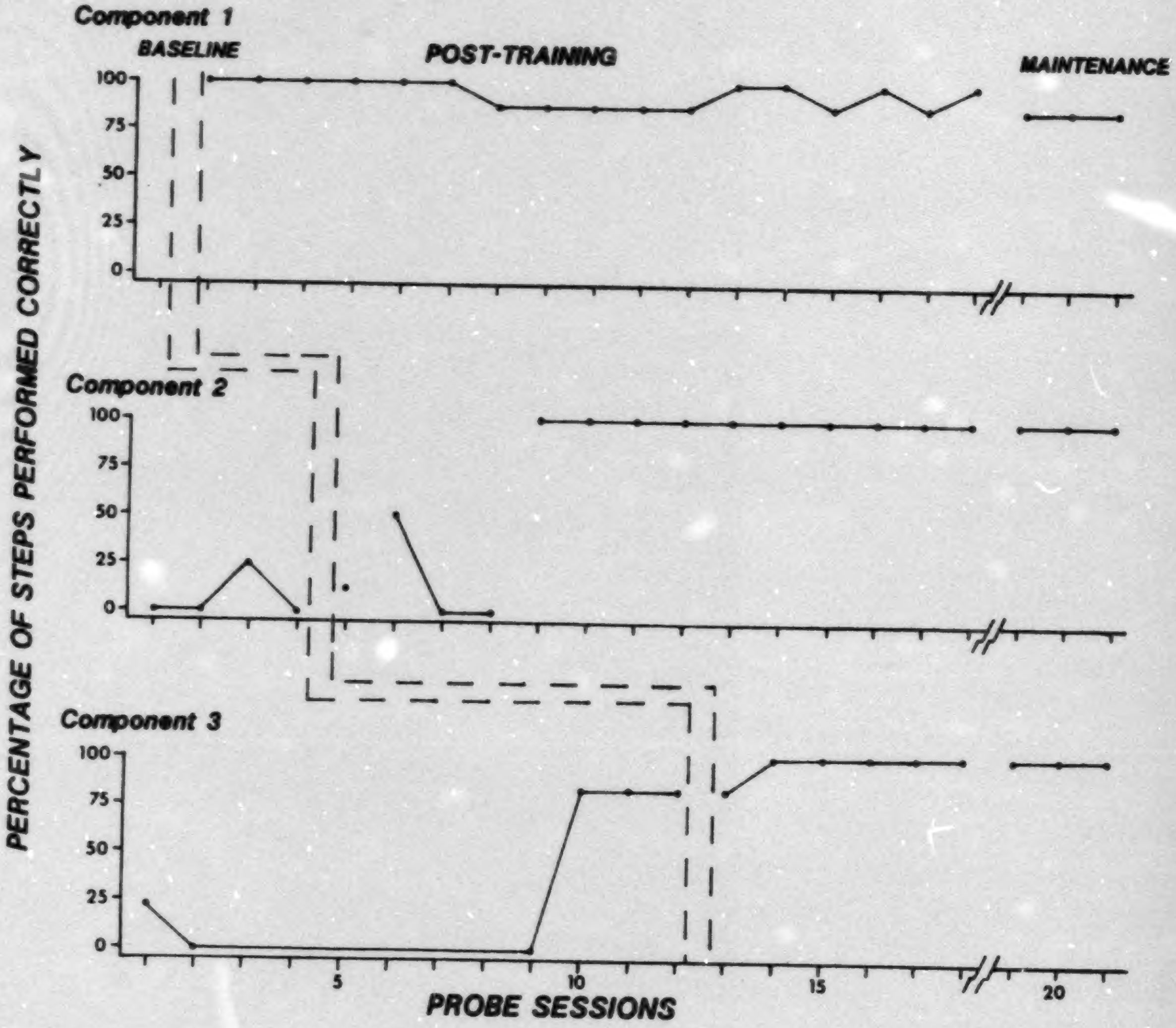
| SKILL | USER RESPONSE | VIDEOSCREEN DISPLAY |
|---|---|---|
| 1.1 | Approaches within 2 ft. of machine | WELCOME TO SOVRAN'S ANYTIME BANK |
| 1.2 | Removes wallet from pocket and opens it | PLEASE INSERT YOUR CARD FOR SERVICE |
| 1.3 | Removes check from wallet, endorses it, and places wallet on counter | |
| 1.4 | Removes card from wallet and inserts it into machine, matching "Anytime Bank" on card with "Anytime Bank" on machine | |
| 1.5 | Enter personal I.D. number | PLEASE ENTER YOUR PERSONAL IDENTIFICATION NUMBER |
| 1.6 | Replace wallet in pocket | ONE MOMENT PLEASE<br>YOUR ENTRY IS BEING PROCESSED |
| 2.1 | Push "deposit" button, (#2 decision button) | SELECT TRANSACTION<br>PRESS CANCEL IF ERROR MADE<br>WITHDRAWAL<br>DEPOSIT<br>TRANSFER<br>OTHER |
| 2.2 | Push "checking" button, #2 decision button) | SELECT TYPE OF DEPOSIT<br>PRESS CANCEL IF ERROR MADE<br>INTO CHECKING<br>INTO SAVINGS |
| 2.3 | Enters check amount by matching check numbers with # buttons on machine in left to right order | ENTER DOLLAR AMOUNT<br>(AMOUNT APPEARS HERE)<br>PRESS IF CORRECT<br>PRESS IF INCORRECT |
| 2.4 | Matches check amount shown on screen with amount on check | |

| SKILL | USER RESPONSE | VIDEOSCREEN DISPLAY |
|---|---|---|
| 2.5 | If screen and check figures correspond, pushes "correct" button (#2) | |
| 2.6 | If screen and check figures don't correspond, pushes "incorrect" button (#3) and re-enter check amount (step 2.3) | |
| | | ONE MOMENT PLEASE<br>YOUR TRANSACTION IS BEING PROCESSED |
| 2.7 | Lift deposit door and remove deposit envelope. | PLEASE LIFT DOOR AND INSERT ONE SEALED ENVELOPE |
| 2.8 | Place check in envelope, seal envelope and place in deposit slot. | |
| | | ITEMS DEPOSITED ARE CREDITED TO YOUR ACCOUNT SUBJECT TO FINAL COLLECTION |
| 3.1 | Push "no" button (#3), ending transaction | YOUR TRANSACTION IS COMPLETE WOULD YOU LIKE ANOTHER?<br>PRESS IF YES<br>PRESS IF NO |
| 3.2 | Remove wallet from pocket and open it. | PLEASE REMOVE YOUR CARD AND RECEIPT |
| 3.3 | Remove receipt from machine, place in money section of wallet. | |
| 3.4 | Remove card from machine, place in wallet. | |
| 3.5 | Return wallet to pocket. | THANK YOU FOR USING SOVRAN'S ANYTIME BANK |
| 3.6 | Walk away from machine | SOVRAN NATIONAL BANK BEING THE BEST IS A LIFETIME JOB |

## Figure Caption

Figure 1. Depiction of automated banking machine.

Figure 2. Percentage of correct responses on generalization probes during baseline, post-training and maintenance conditions.


Component 1
BASELINE
POST-TRAINING
MAINTENANCE
100
75
50
25
0
PERCENTAGE OF STEPS PERFORMED CORRECTLY
Component 2
100
75
50
25
0
Component 3
100
75
50
25
0
5
10
15
20
PROBE SESSIONS

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# A DEMONSTRATION OF THE ACCEPTABILITY OF APPLIED BEHAVIOR ANALYSIS IN A NATURAL JOB ENVIRONMENT

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# Abstract

The present study involves the implementation of a reinforcement point system with a mentally retarded worker to increase appropriate job completion in a natural community job setting--the kitchen of a private hospital. Using a changing criterion design, the study demonstrated the effectiveness of the program. Social validation questionnaires showed the effectiveness of the intervention and the acceptability of such techniques to the employer. Implications of these results for personnel preparation programs and the effects of implementing more elaborate behavioral intervention programs on the attitudes of significant others in the job site are discussed.

# A Demonstration of The Acceptability Of Applied Behavior Analysis In a Natural Job Environment

Current rehabilitation literature contains an increasing numbers of successful job placement demonstrations with persons who are moderately to severely mentally retarded using direct job site training/advocacy services (Brickey, Browning, & Campbell, 1982; Brickey & Campbell, 1981; Kraus & MacEachron, 1982; Sowers, Thompson & Connis, 1979; Wehman, 1981). These services have been described as the Supported Work Model (Wehman & Kregel, in press). The use of direct job site training in natural work environments raises legitimate concerns regarding the use of more elaborate behavior change intervention than are normally used by regular supervisors on the job. Two primary questions surface regarding the use of applied behavior analysis in the presence of nonhandicapped coworkers on community job sites. The first involves the issue of consumer acceptability: that is, will such techniques be deemed acceptable by employers and coworkers on the job? The second involves threats to the principle of normalization and whether the treatment outcome justifies the risk that the individual may be viewed as more abnormal.

Examining the first issue of consumer acceptability, Menchetti, Rusch, and Lamson (1981) offer some disconcerting evidence that employers, themselves, may not approve of certain common techniques such as token economies, ignoring inappropriate behavior, or the use of golf counters in data collection on the job. The authors, however, caution the reader in the interpretation of these survey data. For instance, although 60 percent of the small sample of employers had indicated a previous working history with handicapped, this did not mean that these employers had ever been involved with a program capable of providing job coaching or direct job site training used with the supported work model (in press). In other words, the employer's opinions may have been very different had they worked with job placement professionals who have been trained to systematically apply behavioral procedures such as token economies.

Secondly, the use of more elaborate behavioral strategies in natural community settings may indeed pose threats to the principal of normalization. This concern stems from investigations showing that certain treatments may promote an image of an individual as being more severely handicapped than is actually the case (Kazdin, 1980). In line with this finding, Rusch & Menchetti (1981) show that a common technique which is "normally" used in work settings with nonhandicapped can be systematically applied to modify the behavior of a mentally handicapped individual on the job. The technique used was the threat and contingent use of suspension. Although demonstrations such as this are important in that they vividly challenge us to use the most normalizing technique possible in a natural community job site, such findings should not serve to disarm us of the behavioral strategies which are demanded for effective teaching of persons who are more severely handicapped. Intuitively, we know that the threat of suspension would probably not be the technique of choice when working with individuals who are more intellectually limited.

With the growing acceptance of direct job site training as an effective means of assisting the mentally retarded into the work force, careful application and multiple demonstrations are needed to determine empirically which behavioral strategies will be deemed acceptable and useful in natural work settings. The purpose of this paper is to demonstrate the implementation of a reinforcement point system or token economy in a natural job setting and to show not only its acceptability but the employer's reliance on the program and improved view of the client's working ability following the program. Reinforcement economies have been used for many years in clinical settings such as institutions (Ayllon & Azrin, 1968), school settings (Baer & Guess, 1973; Baker, Stanish, & Fraser, 1972) and in homes or group homes (Bates, 1980; Fixsen, Wolf, & Phillips, 1973). However, there is a paucity of such demonstrations in actual job sites in the community. The objective of the present program was to enable a retarded worker to receive the secondary reinforcement in the form of points delivered by his actual supervisor contingent upon the completion of assigned duties.

## Method

### Client

Tom is a 25 year old man with a measured IQ of 52 using the Stanford Binet Intelligence Scale. He presents himself well socially with a neatly groomed appearance and some conversational skills, although topic selection is often not age-appropriate. Functionally, Tom cannot read or write. He lives at home with his mother who transports him to and from work. Tom works as a pot scrubber in the kitchen of a private hospital. He had maintained this job successfully for two and a half years after an initial intensive training period when the current problem was brought to the attention of his follow-up job trainer.

### Job Setting and Training

The program was conducted in the kitchen of the hospital where Tom was employed. The kitchen prepared food for approximately 850 patients and 400 employees each day. The employer considered this a moderate work load for a pot scrubber. Tom's initial job training involved instruction in the following skills:

- use of a time clock
- method to clean a pot
- system to organize a work area
- orientation of the job site
- associating time of day with the appropriate break time
- operating a garbage disposal
- operating an industrial trash compactor
- mopping
- sweeping
- method to clean stainless steel
- a variety of socialization skills

The employer and job trainer decided that Tom was performing these duties to preselected criterion after 120 hours of intensive job training. Fading of the job trainer on the job site then occurred.

## Social Validation of the Presenting Problem

The supported work program which provides follow-up services to Tom, regularly distributes the Supervisor's Evaluation form, shown in Table 1, to each client's actual supervisor on the job. The supervisor indicates on the form the client's current proficiency on the job and states whether or not the job trainer is needed again for direct services. The evaluation in Table 1 shows that prior to intervention, Tom's performance was threatening his job and that a meeting between the job trainer and supervisor was requested. During the resulting meeting, the supervisor indicated that Tom was routinely (1) not cleaning the certain odd shaped pans, (2) leaving large stacks of dirty sheet pans and (3) leaving work area dirty (i.e. floors greasy, garbage in sink, etc.). The supervisor had noted on his desk calendar that Tom, on the average, completed all of these three work assignments only one day out of five. The supervisor designated these days as "good" days. When any one of the three tasks had not been completed he defined it as a "bad day" and indicated that too on his calendar. Thus, Tom was completing his work appropriately only 20% of the time within a five day time constraint. The employer indicated that he would now accept no more than one "bad day" per month. The job trainer informed the employer that this was a stringent criterion which essentially required appropriate behavior on the average 95 percent of time. The employer, however, insisted that for the three specific work behaviors defined, a 95 percent accuracy rate was needed for proper functioning of the kitchen. In other words, clean pans were needed for the next

Insert Table 1 About Here

shift and dirty, greasy floors were considered dangerous.

## Procedures

### Program Objective

In that the employer provided a specific criterion for eliminating the threat to Tom's job, the objective of the job program was written to directly satisfy those requirements. The program was designed to increase Tom's production rate and performance on all three specific tasks so that it could be demonstrated that he was completing his assignments an average of 95 percent of the time over increasingly longer time constraints.

A secondary objective of the program was to develop a point reinforcement system which would involve minimal supervisor time but adequate reinforcing properties for Tom who exhibited low motivation after two and one half years of routine kitchen work.

### Experimental Design

A changing criterion (Hall, 1971; Hall & Fox, 1977; and Hartmann & Hall, 1976) was used to demonstrate the effect of intervention. This particular design is well suited for a behavior problem which may be threatening dismissal from a job in that it neither withdraws nor temporarily withholds intervention on any critical behavior as a part of the demonstration. To illustrate that intervention does indeed exert control over the behavior, a series of subphases involving specific changing criteria are predetermined to predict improvements in performance. If performance corresponds closely to the change in criterion, after a stable baseline phase, we can assume the intervention is responsible for the change (Kazdin, 1982).

The criterion changes of the current program are listed below:

Baseline

Criterion 1: appropriate work behavior 75% of the time over a four day constraint

Criterion 2: appropriate work behavior 80% of the time over a five day time constraint

Criterion 3: appropriate work behavior 90% of the time over a 10 day time constraint

Criterion 4: appropriate work behavior 95% of the time over a 23 day time constraint

Follow-up Subphase: appropriate work behavior 95% of the time over a 60 day period

Maintenance Phase: average 95% percent accuracy over increased period with zero intervention from supported work staff

## Data Collection

In baseline, the employer maintained 21 days of data on Tom's performance with simple plus or minus marks on the calendar in his office. This system was adopted at the suggestion of the follow-up trainer. A plus (+) indicated a "good" day for Tom, meaning he had completed the pot scrubbing of all odd shaped pans, all sheet pans and had left his work area clean. A minus (-) indicated that Tom had not completed one or more of these tasks at the end of his shift. No contingencies were in place to alter Tom's behavior during this period. At the end of that 21 day period, five additional days of data were collected by Tom's regular follow-up job trainer who simply visited at the end of Tom's shift and assessed whether Tom would receive a plus or minus that day. The length of the total baseline was 26 days.

Identical data collection procedures were adopted during intervention phases; however, the follow-up trainer often participated with the employer in the collection of data.

## Reliability

During all phases of the program a second observer, usually the follow-up trainer, assessed the reliability ratings on at least one out of every five days and often double observations occurred more frequently. Due to the discrete definition of the behaviors being observed, the supervisor and the follow-up job trainer maintained 100% agreement through the baseline and intervention phases.

## Changing Criterion Intervention

Intervention included differential reinforcement of incompatible behavior or DRI (Osborne, 1969) delivered on a daily basis with point exchange conducted through differential reinforcement of high rate responding (DRH) (Brooks & Snow, 1972) over increasing numbers of successful work days. Both schedules involved reinforcement delivery and exchange of "points" in a point system economy (Fixsen, Wolf & Phillips, 1973).

For daily reinforcement (i.e., delivery of points) Tom had to complete the three specific work assignments which in essence was incompatible to the behavior of leaving unfinished work in the three areas. Thus, the DRI schedule involved delivery of points only for specific completion of the three tasks. At the end of each shift, Tom retrieved a recording sheet from his knapsack, listing the three problem areas and asked his employer to rate whether he should receive a plus or minus point for that day. The employer then delivered appropriate points for Tom's work that day. The changing criterion program for higher rate responding (DRH) required that Tom receive and save increasing numbers of plus points over increasing numbers of work days. Tom was always given some room for error. Thus, to exchange, Tom would be required to have a specific number of good days out of larger total of work days.

Criterion 1: In this subphase, Tom was required to receive three plus points on the recording sheet within a four day work period (i.e., completing work assignments 75% of the time during a four day time constraint). Tom had been informed at the onset of the program that he could exchange the three earned points for a desired reinforcer if he could earn them within a four day period. The reinforcer selected was an eight track tape once owned by the job trainer.

Criterion 2: In this subphase, Tom was required to receive four plus points in the next five day period (i.e., to show completion of work assignments 80% of the time during the time constraint). If met, Tom again was told he could exchange points for an eight track tape.

Criterion 3: In this subphase, Tom was required to receive nine plus points within a 10 day period (i.e., to show completion of work assignments 90% of the time during time constraint). The same back-up reinforcer was again selected.

Criterion 4: In this subphase, Tom was required to receive 22 plus points within a 23 day period (i.e., to finally show completion of work assignments according to the employer's standards of an average of 95% time). The same back-up reinforcer was again used in the point exchange.

The follow-up criterion was to maintain completion of the three jobs 95% of the time; however, the time constraint for point exchange was lengthened considerably in order to thin the reinforcement schedule. In this phase, Tom was to collect 60 plus points in 63 working days in order to exchange the points for a newly selected reinforcer of friday evening "happy hour" with the follow-up trainer.

A maintenance period was also conducted in which no specific criterion was set but data were collected and maintained by the employer for an additional 60 day period.

## Social Validation of Program Effectiveness and Acceptability of Procedures

A post-intervention supervisor evaluation form was collected and is shown in Table 2. The comments validated not only the necessary improvements in Tom's performance, but also the employer's acceptance, reliance and interest in the changing criterion system. Anecdotally, the employer stated that the program gave him many ideas to improve the performance of other (nonretarded) workers.

- - - - - - - - - - - - - - - -

Insert Table 1 About Here

- - - - - - - - - - - - - - - -

## Results and Discussion

Figure 1 shows a histogram depicting the criterion changes expressed in percent of appropriate ("good") work days required on the average over the increasingly longer time constraints. The width of the individual bars show the length of the time constraint and the height of the bars show the percent of appropriate work days required within that time constraint.

- - - - - - - - - - - - - - - -
Insert Figure 1 About Here
- - - - - - - - - - - - - - - -

Examination of the results shown in Figure 1 clearly illustrate that Tom's performance corresponds very closely to each change in criterion. Therefore, using this experimental design the intervention can be considered to be responsible for the changes. This is further underscored by the fact that in most of the phases Tom reached his criterion before the time constraint was complete. Specifically, he reached Criterion One of three good days out of four in three days. Criterion Two of four good days out of five, however, took five days to reach. Criterion Three of nine good days out of 10 took nine days and Criterion Four of 22 good days out of 23 was met in 22 days. During the follow-up phase 62 days were required to gain 60 points.

The results of the pre- and post- intervention supervisor evaluations surveys clearly validate (1) the need for the program; (2) that appropriate behavior change was accomplished via a point-reinforcement program; and (3) that the program was considered acceptable and beneficial within a natural competitive job environment.

Although the provision of training within complex community environments presents difficult challenges to professionals involved in such activities, the guiding rule must be to select the most normalizing strategy possible. In job placement of historically unemployed persons, however, this rule cannot be interpreted as a directive to limit the job trainer to only those techniques utilized with non-handicapped employees in jobs. To negate the use of a behavioral technology in natural work settings, gives allegiance to the traditional rehabilitation model which advocates a "sink or swim" approach to job placement. Clearly we know that this approach is unsuccessful with clients who are mentally retarded. Creative problem solving toward normalizing behavioral strategies for the public eye is perhaps the most critical skill needed for professionals involved in the supported work model but it is an area not adequately addressed in personnel preparation programs for most job placement service providers.

Careful examination of the literature shows increasing use of applied behavior analysis to improve vocational skills with developmentally disabled persons. The bulk of this literature, however, involves implementation of procedures in settings approved and designed especially for training purposes. Such training settings are distinct from actual job sites in which the client is competitively employed. Many more demonstrations are needed showing the acceptability or lack of acceptability of applied behavior analysis in natural community job sites with persons who have previously been considerated unemployable.

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Table 1

E 14B

**SUPERVISOR'S EVALUATION FORM**

**TRAINEE/EMPLOYEE'S NAME:** Tom **DATE HIRED:** 10-26-81

**JOB TITLE:** Utility Worker - Pot Scrubber **CURRENT DATE:** 2-25-83

**JOB SITE:** Doctors Hospital

Please circle the number that best represents your opinion about the trainee/employee's present situation.

1. The employee arrives and leaves on time.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

2. The employee maintains good attendance.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

3. The employee takes meals and breaks appropriately.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

4. The employee maintains good appearance.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

5. The employee's performance compares favorably with the other workers' performance.

| | | | | |
|---|---|---|---|---|
| 1 | [✓ 2] | 3 | 4 | 5 |
| Strongly Disagree | Somewhat Disagree | Undecided | Somewhat Agree | Strongly Agree |

6. Communication with the employee is not a problem.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | [✓ 3] | 4 | 5 |
| Strongly Disagree | Somewhat Disagree | Undecided | Somewhat Agree | Strongly Agree |

7. The employee attends to job tasks consistently.

| | | | | |
|---|---|---|---|---|
| 1 | [✓ 2] | 3 | 4 | 5 |
| Strongly Disagree | Somewhat Disagree | Undecided | Somewhat Agree | Strongly Agree |

8. Your overall appraisal of the employee's proficiency at this time.

| | | | | |
|---|---|---|---|---|
| 1 | [✓ 2] | 3 | 4 | 5 |
| Needs Immediate Improvement | Somewhat Sub-standard | Satisfactory | Somewhat Better Than Required | Much Better Than Required |

9. Do you wish to meet with a representative from the Project staff?

[✓ YES] NO

Additional Comments: Tom's performance is not consistent from day to day. The slightest distraction (someone talking, a special function, etc.) causes Tom to fall behind in his work. Some days, he does not even speak at all; and it is difficult to communicate with him. Only completes his work one day out of five.

Table 2

SUPERVISOR'S EVALUATION FORM

TRAINEE/EMPLOYEE'S NAME: Tom DATE HIRED: 10-16-81
JOB TITLE: Pot Scrubber CURRENT DATE: 6-22-83
JOB SITE: Doctors Hospital

Please circle the number that best represents your opinion about the trainee/employee's present situation.

1. The employee arrives and leaves on time.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

2. The employee maintains good attendance.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

3. The employee takes meals and breaks appropriately.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

4. The employee maintains good appearance.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | [✓ 5] |
| Much Too Seldom | Not Often Enough | Undecided | Usually | Always |

5. The employee's performance compares favorably with the other workers' performance.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | [✓ 4] | 5 |
| Strongly Disagree | Somewhat Disagree | Undecided | Somewhat Agree | Strongly Agree |

6. Communication with the employee is not a problem.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | [✓ 3] | 4 | 5 |
| Strongly Disagree | Somewhat Disagree | Undecided | Somewhat Agree | Strongly Agree |

7. The employee attends to job tasks consistently.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | [✓ 4] | 5 |
| Strongly Disagree | Somewhat Disagree | Undecided | Somewhat Agree | Strongly Agree |

8. Your overall appraisal of the employee's proficiency at this time.

| | | | | |
|---|---|---|---|---|
| 1 | 2 | [✓ 3] | 4 | 5 |
| Needs Immediate Improvement | Somewhat Sub-standard | Satisfactory | Somewhat Better Than Required | Much Better Than Required |

9. Do you wish to meet with a representative from the Project staff?

YES [✓ NO]

Additional Comments: Recently, Ms. Brooke instituted a program where Tom is given a daily mark according to how well he did that particular day. At the end of a predetermined period, if Tom does well, he receives a reward. I found this very helpful in that Tom has become more consistent in his work. If he has a bad day, we discuss the problem and try to arrive at some solution. Tom seems to enjoy the program and takes pride in his daily progress. I greatly appreciate Ms. Brooke's help in this matter.

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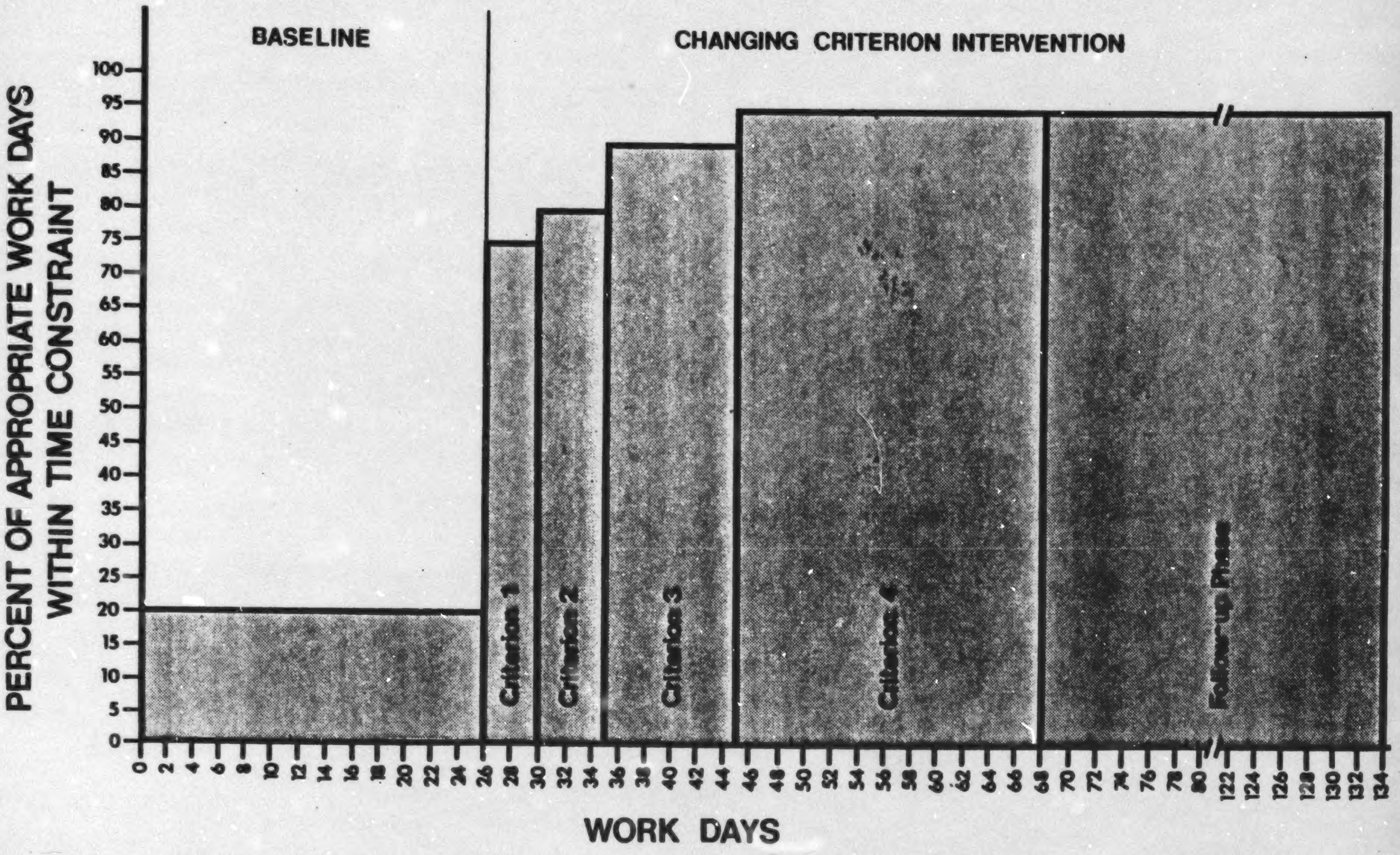
## Figure Caption

Figure 1. Percent of appropriate work days within time constraints for Tom.


BASELINE
CHANGING CRITERION INTERVENTION
PERCENT OF APPROPRIATE WORK DAYS WITHIN TIME CONSTRAINT
100
95
90
85
80
75
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65
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Criterion 1
Criterion 2
Criterion 3
Criterion 4
Follow-up Phase
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122
124
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128
130
132
134
WORK DAYS

# THE DEVELOPMENT OF PUNCTUALITY IN A MENTALLY RETARDED WORKER THROUGH SELF-RECORDING

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# Abstract

The present study evaluated the effects of self-recording on the frequency and duration of early check-outs from work by a severely disabled, mentally retarded worker. The results of an A-B-A-B reversal analysis indicated that self-recording dramatically reduced both the frequency and duration of early check-outs, thereby facilitating the continued employment of the client. Variables which may account for the effect of self-recording and implications of these findings for the job placement of mentally retarded persons are discussed.

# The Development of Punctuality in a Mentally Retarded Worker Through Self-Recording

A frequently cited factor in the dismissal of handicapped workers is inadequate attendance and excessive tardiness (Greenspan & Schoultz, 1981; Kochany & Keller, 1981; Rudrud, Ferrara, & Ziarnik, 1980; Sowers, Rusch, Connis, & Cummings, 1980). With mentally retarded workers, several factors may contribute to this problem, including relying upon others for transportation, failing to understand the contingencies of work, and failing to understand time concepts. Although acquisition of time-telling skills is not critical for obtaining and maintaining competitive employment, an awareness of the importance of punctuality in arriving and leaving work is essential to insuring long-term, successful employment among mentally retarded persons.

One strategy that has been employed to develop punctuality among non-time-telling mentally retarded workers has been the use of cue cards with clock faces printed on them (Sowers et al., 1980; Vogelsberg & Rusch, 1980). Sowers et al. (1980), for example, used cue cards in combination with pre-instructions and instructional feedback to teach three retarded workers when to begin and end lunch and coffee breaks. Within a multiple baseline design, each subject was taught to begin and end his/her break when the time shown on the cue card matched that shown on a real clock. Dramatic improvements in the punctuality of each subject was demonstrated and shown to maintain after pre-instructions and instructional feedback had been withdrawn. The use of such cue cards, however, appear limited in application to employment situations in which schedule variations are minimized. For example, a worker who is required to perform an additional task before his lunch break would inadvertently experience a shorter lunch period if he attended solely to the cue cards.

An alternative strategy that could be employed with mentally retarded workers is the use of self-recording procedures. The effectiveness of self-management techniques as a behavior change agent has previously been demonstrated with nonhandicapped children (Liebert, Spiegler, & Hall, 1970; Thomas, 1976), and with adults in clinical settings for the amelioration of obesity (Mahoney, Moura, & Wade, 1973), smoking (Axelrod, Hall, Weis, & Rohrer, 1974), and substance abuse (Sobell & Sobell, 1972). Recent demonstrations have also extended the effectiveness of self-management techniques to mentally retarded persons for increasing work productivity (Jens & Shores 1969; Wehman, Schutz, Bates, Renzaglia, & Karan, 1978; Zohn & Bornstein, 1980), task sequencing (Connis, 1979) and study behavior (Horner & Brigham, 1979). Collectively, these studies indicate that mentally retarded adults are capable of self-monitoring their own behavior with a great deal of accuracy.

A desirable phenomenon reported in self-recording investigations has been the occurrence of reactive alterations in the target behavior (Herbert & Baer, 1972; Nelson, Lipiniski, & Black, 1972). While a variety of theories have been posited to account for reactivity, the critical issue for the clinician is that self-recording may provide a relatively unobtrusive and feasible means of producing generalized behavior change. As applied to the development of time-management skills with a mentally retarded worker, requiring the worker to record arrival and departure times may facilitate improved punctuality. The purpose of the present study, therefore, was to assess the applicability of self-recording procedures to improve the punctuality of a mentally retarded worker. Within this context, a reversal design was employed, in which self-recording and intermittent staff feedback were systematically applied and then withdrawn.

## Method

### Client and Setting

A 31 year-old severely disabled, mildly retarded woman, employed as a silverware roller at a supper club participated in this study. Shari had obtained her job through the services of a federally funded vocational rehabilitation project providing placement, training, and follow-up services for mildly to severely retarded adults (Wehman & Kregel, in press). Prior to her placement at the supper club, Shari had attended a prevocational training program. She worked approximately 25 hours per week, Monday through Friday, with another mentally retarded worker. Shari and her coworker shared the same job duties and schedule.

## Dependent Measure

Each workday, the restaurant manager told Shari and her coworker the time they were to check-out. The check-out time varied from day to day, based upon restaurant projections for that evening's business volume. The dependent measure, therefore, was the number of minutes that the client checked out earlier than her coworker. The restaurant manager had contacted the job trainer due to frequent and inappropriately early check-outs by Shari, who would either leave work unexcused, or provide a somatic excuse for leaving early (e.g., feeling ill).

Data were collected by the authors who reviewed time cards for Shari and her coworker. These time cards displayed initial check-in time, time out and in for lunch, and check-out time at the end of the day. The dependent measure was derived by subtracting Shari's check-out time from that of her coworker.

## Procedures

Baseline. During this condition, no contingencies for checking out early were in effect. Shari was required to record her time in and out of work by inserting her time card into the clock. Periodic and unannounced visits by the job trainer were made every three or four days to ensure that Shari and coworker were maintaining appropriate production levels. This condition was in effect for 40 days.

Self-Recording. On the first day of this condition, the job trainer presented Shari with a self recording sheet and instructed her to record her check-out time daily, in addition to checking-out on her time card. The self-recording sheet consisted of a 8 1/2 by 11 in. piece of paper printed with a calendar grid. The days of the week were printed at the top of the columns, with the dates printed in the upper right hand corner of each box. After presenting the self-recording sheet to the client and explaining the self-recording procedure, the job trainer instructed the client to keep the sheet in her purse. The job trainer provided feedback to the client every three or four days at the job site. During these unannounced visits, the trainer reviewed Shari's self-recording sheet and validated it against her time card. Correspondence between the self-record sheet and time card was reinforced with social praise (e.g., "I'm glad to see you are checking out on time."). Shari was reprimanded if the self-record sheet and time card did not correspond, or if an early checkout had occurred, as it did on day 42. Self-recording procedures were in effect for twelve days.

Baseline II. On the first day of this condition, the trainer informed Shari that she did not need to self-record any more. During this twenty-two day period, conditions were identical to those during the initial baseline phase.

Self-Recording II. Self-recording procedures, identical to those previously described, were reimplemented for 19 additional days. Following days 56, 57, and 60, discrepancies between the self-record and time cards were noted. On these occasions, the job trainer admonished Shari for not recording accurately and emphasized the importance of honesty in keeping a job.

Experimental design. This study employed an A-B-A-B reversal design (Baer, Wolf, & Risley, 1968) to assess the effectiveness of self-recording on the reduction of early check-outs. This design demonstrates experimental control as measures of the dependent variable vary in correspondence with systematic applications and withdrawals of the independent variable. Initial baseline conditions were in effect for 40 days followed by 12 days of self-recording. Subsequently, self-recording procedures were withdrawn, constituting a return to baseline for 22 days, followed by reimplementation of self-recording for 19 additional days.

## Results

Figure 1 presents the daily deviation, in minutes, of the client's check-out time from that of her coworker. The number of minutes the client checked-out early are plotted along the ordinate with work days plotted along the abscissa.

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During the initial baseline condition, 11 early check-outs were recorded (mean daily occurrence = .28), ranging from 1 minute to 59 minutes (mean = 24.7) in length. Following the implementation of self-recording on day 41, only one early check-out occurred (mean daily occurrence = .08). This check-out was 2 hours, 7 minutes earlier than the coworker's check out time. When self-recording procedures were withdrawn on day 53, 10 early check-outs were recorded (mean daily occurrence = .45), ranging in length from 1 minute to 2 hours, 19 minutes (mean = 36.9 minutes). Following day 76, when self-recording procedures were reimplemented, four early check-outs occurred (mean daily occurrence = .05), ranging from 1 minute to 2 hours, 43 minutes (mean = 41.5 minutes).

Accuracy of self-recording was assessed by comparing self-recorded check-out times with actual check-out times as found on corresponding time cards. Due to Shari's poor time-telling skills, agreements were scored any time differences between self-recorded and actual check-out times were less than 15 minutes. During Self-Recording I, Shari accurately recorded her check-out time 100% of the time. Accuracy during Self-Recording II was 83 percent, as Shari's record corresponded with her time card 15 out of 18 times.

## Discussion

The purpose of the present investigation was to assess the effectiveness of self-recording procedures to improve the punctuality of a mentally retarded worker.

Although limited to one client, these results add to the growing body of literature attesting to the employability of mentally retarded persons in competitive non-sheltered sites (cf., Sowers et al., 1980) through the supported work model of job placement and follow-up. Additionally, the application of self-recording with a mentally retarded worker in this study represents a further extension of self management procedures which have typically been restricted to children and adults of normal intelligence.

The rapid reduction in early check-outs obtained during both intervention phases attests to the powerful effects of self-recording. This effect, however, is not clearly demonstrable as periodic trainer feedback was also provided. As such, the results obtained may have been a function of the discriminative properties of self-recording, the contingent feedback by the job trainer, or a combination of the two. Previous investigations have demonstrated the reactive effect that self-recording may produce (cf., Herbert & Baer, 1972). That is, the act of self-recording results in the observed stimulus situation being altered. For example, by engaging in some form of self-recording, the subject is functionally incapable of engaging in an alternative response (e.g., target behavior) resulting in an alteration of the observed situation. An alternative explanation for the reactive effect of self-recording was posited by Rachlin (1976), who suggests that the act of self-recording produces a number of cues, signaling to the subject the external consequences for the observed behavior. As applied to the present investigation, this analysis would suggest that Shari stopped checking out early during self-recording because, in the process of self-recording, the client was reminded of the effect which her check-out time would have on future interactions with the job trainer. Such an analysis may account for the present results since initially during both self-recording phases the client checked out early once and was later reprimanded by the job trainer. Subsequently, however, no further early check-outs were reported.

The present results are somewhat perplexing when one considers the fact that during baseline, the client was already engaged in a form of self-recording by using the time clock. The time clock, however, employed a one-hundred unit hour system which made translation to a standard sixty minute hour difficult. In addition, the client was not required to attend to the time as the clock automatically printed the time on her time card. In contrast, during self-recording, the client was required to look at the face on the front of the time clock and accurately produce the time on her self-recording sheet. As such, it appears that the act of self-recording may have increased the saliency of time for the client, making her more aware when she checked out early.

Future research should be conducted to further assess the effectiveness of self-recording among mentally retarded persons. The present results add to the existing support for such an application while demonstrating unobtrusuve and effective programming as a follow-up strategy for the competitively employed mentally retarded worker.

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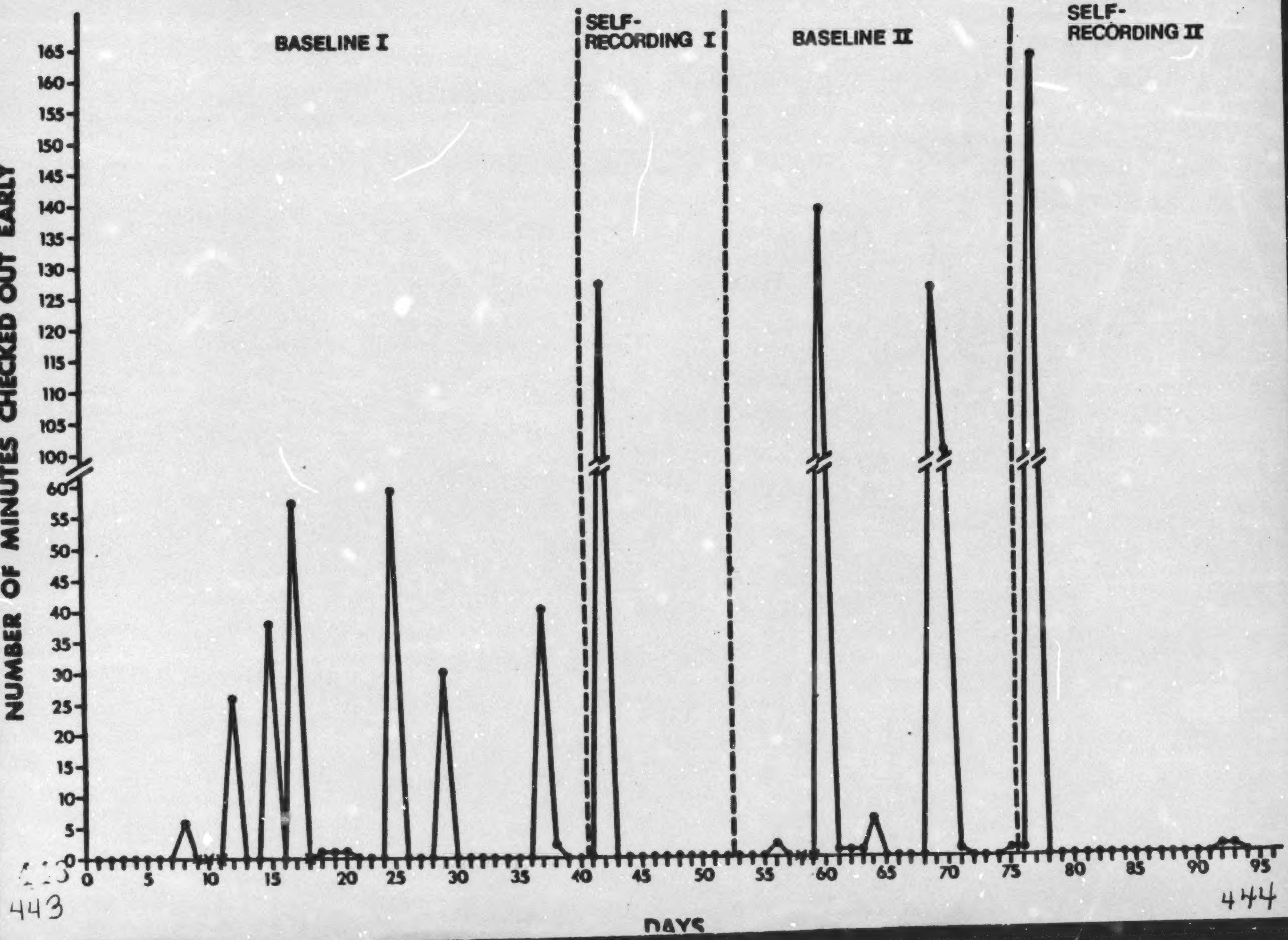
## Figure Caption

Figure 1. The number of minutes Shari checked out earlier than her coworker.


BASELINE I
SELF-RECORDING I
BASELINE II
SELF-RECORDING II
NUMBER OF MINUTES CHECKED OUT EARLY
165
160
155
150
145
140
135
130
125
120
115
110
105
100
60
55
50
45
40
35
30
25
20
15
10
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DAYS